Alberta
Energy
Regulator
16 annual
/17 report

our mandate

The Alberta Energy Regulator ensures the safe, efficient, orderly, and environmentally responsible development of hydrocarbon resources over their entire life cycle. This includes allocating and conserving water resources, managing public lands, and protecting the environment while providing economic benefits for all Albertans.

our mission

To regulate Alberta's energy resources by protecting what matters most to Albertans—public safety, the environment, and economic value.

our vision

The Alberta Energy Regulator is recognized for regulatory excellence, ensuring the safe, environmentally responsible development of energy resources for the benefit of all Albertans.

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ABOUT THE AER

The Alberta Energy Regulator (AER) is the single provincial regulator for oil, natural gas, oil sands, and coal development in Alberta. The AER ensures the safe, efficient, orderly, and environmentally responsible development of energy resources. This includes allocating and conserving water, managing public lands, and protecting the environment while securing economic benefits for all Albertans.

This is our role, but how does this work in the real world?

The Alberta Energy Regulator (AER) is the single provincial regulator for oil, natural gas, oil sands, and coal development in Alberta. This means that companies deal with the AER when carrying out activities in each stage of energy development, from initial exploration, to operation, right through to closure, including reclamation and remediation.

The AER ensures the safe, efficient, orderly, and environmentally responsible development of energy resources. It's our job to make certain that Alberta's oil, gas, bitumen, and coal are developed and transported in ways that

- ensure public safety;
- protect our air, water, land, and biodiversity; and
- make the best use of our valuable energy resources.

This includes allocating and conserving water, managing public lands, and protecting the environment ... The AER decides when, where, and how the energy industry may use water, and we make sure that Alberta's water resources are protected. We regulate any energy development that occurs in the province, and we work to ensure this development doesn't damage our province's environment.

... while securing economic benefits for all Albertans. We are part of a broader government system that ensures that Alberta and its citizens receive full value for our energy riches.

OUR RESPONSIBILITIES

Few organizations on the planet steward such a large and varied mix of energy resources and infrastructure as the AER. We oversee some very large established reserves:

- 1.6 billion barrels of conventional oil
- 165 billion barrels of bitumen
- 28.2 trillion cubic feet of natural gas
- 36.6 billion tons of coal

That's a lot of energy, and it requires a lot of infrastructure to produce, mine, process, and move to markets. We're also responsible for regulating this infrastructure, which belongs to what's called "upstream" development:

- more than 422 000 kilometres of oil and gas pipelines, in addition to inspection and incident response support for 12 000 kilometres of pipelines regulated by the Alberta Utilities Commission
- over 167 000 operating wells
- 30 000 oil facilities
- 21 000 gas facilities
- 50 thermal in situ (oil sands recovery) projects
- 9 oil sands mines
- 5 bitumen upgraders
- 4 coal processing plants
- 6 producing coal mines

* Items highlighted in green can be found in the glossary.

WHAT WE REGULATE

MORE THAN **422 000*** KILOMETRES OF PIPELINES

OVER **167 000** OPERATING NATURAL GAS & OIL WELLS

30 000 OIL FACILITIES

AND CLOSE TO

21 000 GAS FACILITIES

50 THERMAL/ENHANCED IN SITU PROJECTS

9 OIL SANDS MINES

5 BITUMEN UPGRADERS

4 COAL PROCESSING PLANTS

6 PRODUCING COAL MINES

*In addition to inspection and incident response support for 12 000 kilometres of pipelines regulated by the Alberta Utilities Commission.

Original graphic provided by Oilweek Magazine

The Government of Alberta gives the AER authority to ensure that companies develop the province's massive energy resources in a safe and environmentally responsible fashion, and without wasting these resources:

- We review applications and make decisions on proposed energy developments (almost 134 000 applications processed since June 2013).
- We oversee all aspects of energy resource activities in accordance with government policies.
- We regularly inspect energy activities to ensure that all applicable requirements are met.
- We penalize companies that fail to comply with AER requirements.
- We hold hearings on proposed energy developments.

To make it happen, the AER employs 1200 inspectors, technical staff, engineers, geologists, scientists, investigators, stakeholder engagement specialists, mediators, lawyers, regulatory experts, and other employees in 15 offices and field centres around Alberta.

The AER also offers two unique and world-class services: the Core Research Centre (CRC) and the Alberta Geological Survey (AGS).

The CRC collects, preserves, and displays core samples (1.5 million boxes of these cylindrical rock samples), drill cuttings (20 million vials of them), and drilling and completion records from over 400 000 wells;companies use these to research what's below the ground and to plan how to develop oil and gas.

The AGS offers a scientific view into the world beneath Alberta. AGS geoscientists provide many services, including determining the effect of oil and gas development on seismic events, monitoring the Crowsnest Pass's unstable Turtle Mountain, and mapping Alberta's valuable groundwater resources.

ALBERTA'S SINGLE ENERGY REGULATOR

The Government of Alberta created the AER in 2013 when it proclaimed the *Responsible Energy Development Act*. We took on regulatory functions that are related to energy development and that were held by Alberta Environment and Parks (previously Alberta Environment and Sustainable Resource Development) and combined them with the regulatory functions of the Energy Resources Conservation Board.

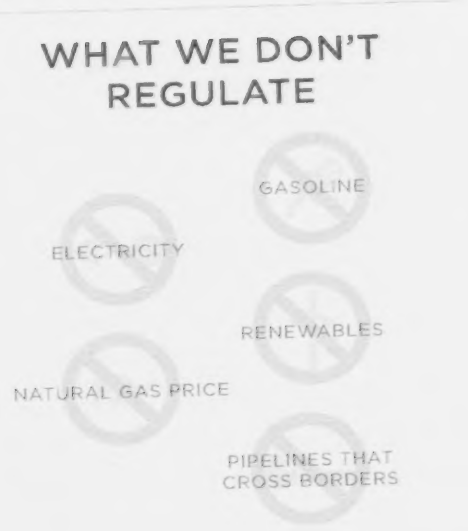
The AER's role is to develop and enforce rules and regulations around energy development, taking direction from government policy.

The AER is a key partner in the government's Integrated Resource Management System, a collaborative and coordinated approach to managing Alberta's environment and natural resources. Other partners are the government departments of Environment and Parks, Indigenous Relations, Energy, Agriculture and Forestry, and Health.

WHAT WE DON'T REGULATE

The AER's authority is limited to activities that relate to oil, bitumen, natural gas, and coal development. We have no authority over any of the following:

- any aspect of electricity generation or distribution, including renewable energies, gas utility pipelines, and the price of natural gas (these are regulated by the Alberta Utilities Commission);
- gasoline or other refined petroleum products; and
- oil and gas pipelines that cross provincial or international borders (these are regulated by the National Energy Board).



MESSAGES

MESSAGE from the chair

Albertans are resilient. We've demonstrated it over and over again throughout our history.

These last few years have been difficult, with our economy suffering through low commodity prices and overwhelming uncertainty. Despite these challenges, Albertans remain steadfast in their commitment to focus on maximizing opportunities.

Alberta made international headlines for other reasons in 2016, namely for its rapid and compassionate response during the Fort McMurray wildfires. Not only did AER employees jump into action by supporting Alberta's response to the blaze, many did so knowing that their own homes were threatened. The board and I are proud of their commitment and thank all staff involved for their extraordinary efforts.

I also want to acknowledge and congratulate President and CEO Jim Ellis on being named the Resource Leader of the Year for 2016 by the Alberta Chamber of Resources. This accolade reflects Jim's dedication to building an excellent regulator and serves as an exceptional example to all employees.

Both senior leadership and employees have demonstrated what it means to be an excellent regulator. Throughout this report, you'll read stories of how the people of the AER are maintaining our commitment to safety and environmental protection. This is something we demand not only of ourselves but of the industry we regulate by being innovative and resolute about protecting the public and the environment. An example of this is the launch of the industry performance program that sets the foundation for measuring, evaluating, and reporting on energy development activities that we regulate.

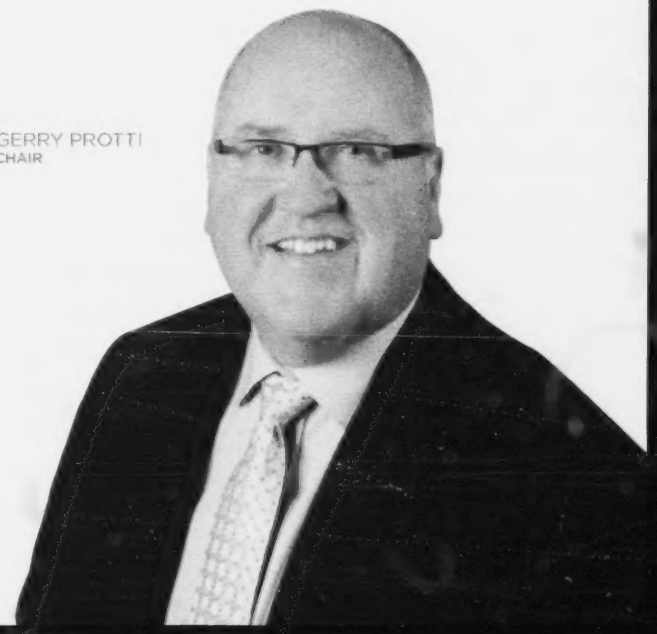
Last year, the board bid farewell to some of the AER's original directors—Dr. David Chalack, Peter Flynn, Andy Neigel, and Sheila O'Brien. These individuals had been with the AER since its creation in 2013 and contributed extensively to the board's committees; these contributions are all detailed in previous annual reports. Their departure is a loss in expertise and continuity for the board and they will be missed. The board thanks them for their contributions and wishes them well.

The board's specific activities can be found on page 46.

With the departure of the previously mentioned directors, we are fortunate to welcome new, highly qualified people to the board—Stan Boutin, Monica Norminton, and Jack Royal—who will bring expertise and experience that will help the organization continue its journey toward excellence.

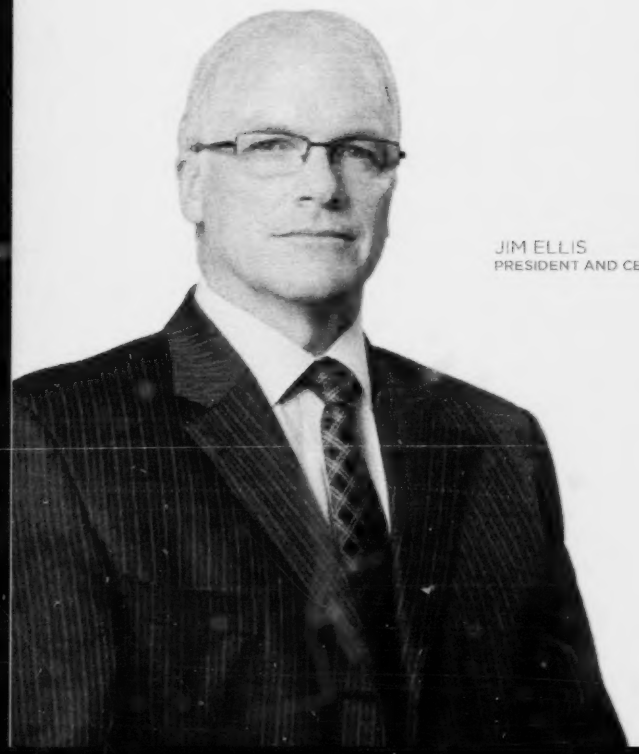
The year ahead will be a pivotal one that will include releasing a refreshed strategy for 2018 that will continue to strengthen our position as a trusted regulator and partner to our stakeholders and all Albertans.

GERRY PROTTI
CHAIR



MESSAGE from the president and ceo

The past year brought further economic uncertainty for our province and its energy industry. It also offered the promise of recovery.



JIM ELLIS
PRESIDENT AND CEO

Through good times and bad, the AER's core business remains creating requirements around energy development and enforcing these requirements. This is how we protect what Albertans have told us matters to them: our air, land, water, and biodiversity.

In February we issued the *Pipeline Performance Report*, the first in a series on industry performance to increase transparency and drive accountability. It's important that the AER provide Albertans with a better understanding of how pipeline safety is being managed; it's also important operators work towards zero incidents. In addition to pipelines, we're applying this approach to water use in the energy industry.

Sometimes the emergencies we respond to aren't caused by pipeline spills or blowouts.

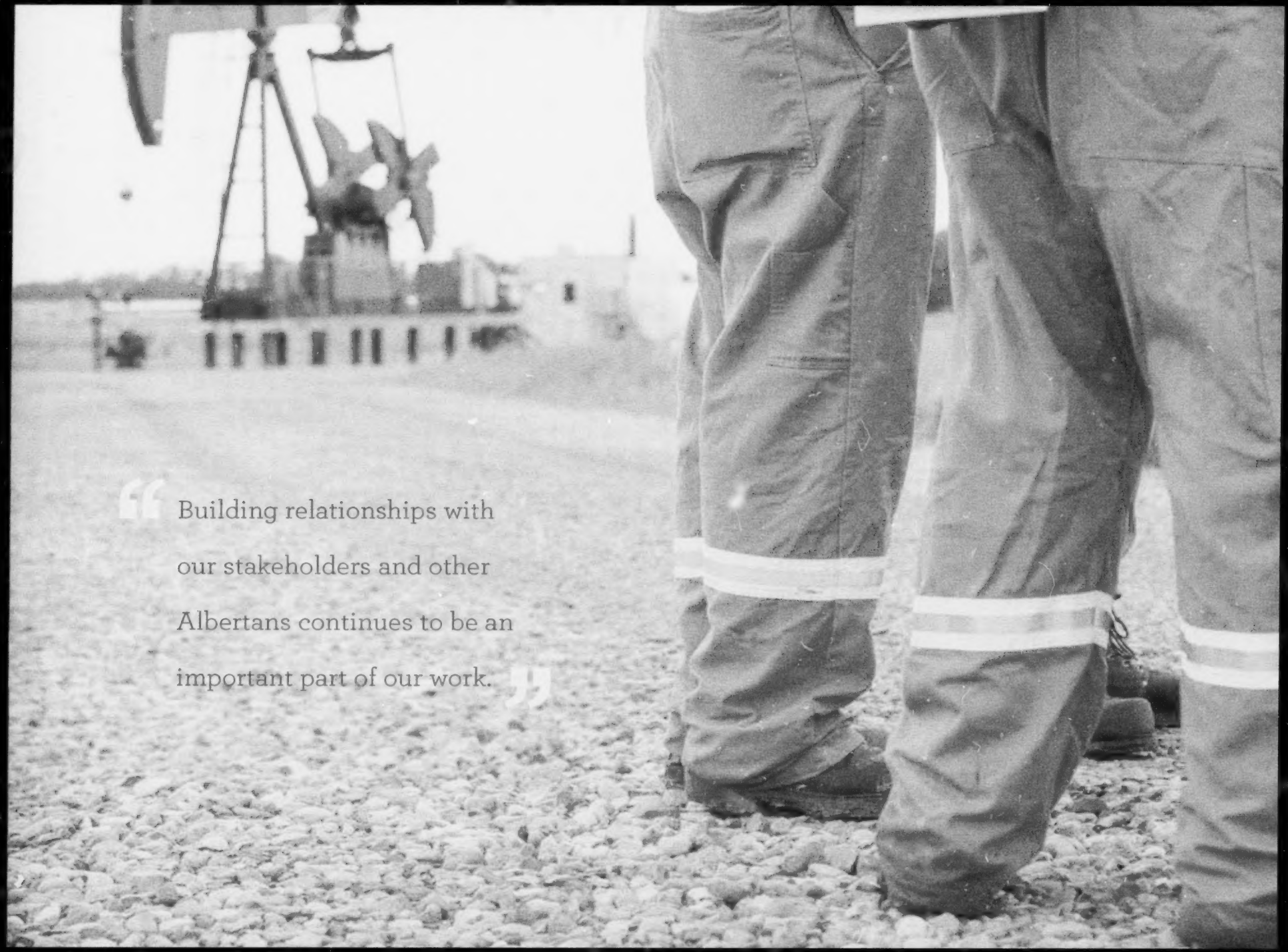
Last spring, the AER stepped up to support response efforts when wildfires swept across northeast Alberta. We had "boots on the ground" in the field, in emergency operations centres, and in our offices across the province. Using innovative technology, we provided valuable information to government and industry as well as ensured the safe startup of energy operations once crews brought the fire under control. This was a testament to the dedication and resolve of our employees.

Building relationships with our stakeholders and other Albertans continues to be an important part of our work. Since the AER was formed in 2013, we've prioritized engagement and have realized successes. That said, an area that's needed a lot more work is how we engage Alberta's indigenous peoples—something that we're taking steps to address.

One such step was our collaboration with indigenous elders to develop *Voices of Understanding*, a document about the process of using oral decision-making to help improve interactions between the AER and indigenous people. This document focuses on the processes and protocols of circle management—a decision-making method for the Blackfoot people.

We've continued to find efficiencies in our regulatory system, allowing us to not only focus on higher-risk activities but to generate over $224 million in savings for industry in 2016/17 ($1.9 billion since 2014) without compromising public safety or environmental protection.

You can read about these and other stories in this, our fourth, annual report. As we reflect on the challenges we faced and the progress we made in the 2016/17 fiscal year, we share our plans to improve our operations and meet our targets in the pursuit of our vision of regulatory excellence.


“Building relationships with our stakeholders and other Albertans continues to be an important part of our work.”

MESSAGE: an employee's perspective

Since my university days, one of the questions I have been asking myself is how can I make a difference? The answer soon came to me when I started working for the Energy and Utilities Board, one of the AER's predecessors, in 2001. As a new employee, I quickly realized that the regulator is a place where I could make a difference.

I'm fortunate to work in the AER's Closure and Liability Branch, which is responsible for ensuring that the infrastructure associated with energy development such as wells, facilities, pipelines, coal mines and oil sands mines, and their associated sites, move through the life cycle to reclamation once they are no longer used for resource development. In other words, my colleagues and I help ensure that Alberta and Albertans are protected both today and well into the future.

Dealing with this issue isn't an AER-only challenge. Whether the issue is what to do with thousands of inactive wells or a coal mine, regulators around the world are facing the same monumental challenges. And while I wouldn't say there is comfort in knowing that we aren't alone in this situation, we are definitely benefitting from other jurisdictions' experience.

I see the benefits of reaching out to our peer regulators in my role at the AER and in my role as chair of the Interstate Oil and Gas Compact Commission's International Committee, which comprises senior regulatory officials from across North America and is tasked with identifying, investigating, and analyzing the energy sector's key international issues. In both roles, I work with many dedicated people trying to improve all aspects of regulation. This collaboration leaves me with no doubt that the more we put into practice the knowledge and experience we learn from each other within the AER and across the world, the better equipped we all are to deliver on our respective mandates.

One thing I often remind myself of is that while our regulatory responsibility may end at our provincial boundaries, the foundation of our mandate to provide for the efficient, safe, orderly, and environmentally responsible development of energy resources should know no boundaries.

So here, at the AER, is where I'm making a difference, and I'm doing it alongside some of the most dedicated experts in energy regulation—all of whom have enough knowledge, experience, and talent to carry the AER's work through the next 80 years.

DAVID HARDIE
PROGRAM LEAD, CLOSURE STRATEGY
CLOSURE & LIABILITY BRANCH

“Whether the issue is what to do with thousands of inactive wells or a coal mine, regulators around the world are facing the same monumental challenges.”

Supported the government response to the Fort McMurray wildfire by providing valuable information to industry and by ensuring the safe startup of operations once the fire was controlled.

$224 MILLION

Generated over $224 million in annual savings for industry by making our regulatory processes more efficient, without compromising public safety or environmental protection.

reSource

Launched Resource.aer.ca, a site where the AER posts stories, images, and video about Alberta's energy development and how it's regulated—with more than 80 stories and some 30 000 visitors.

HIGHLIGHTS 2016/17

Developed new rules to manage tailings with the ongoing support of a committee of AER stakeholders.

17 recommendations

Worked with Alberta Health on a year-long study into air quality and odour concerns near Fort McKay by making 17 recommendations to improve conditions.

1 application review decision

Piloted a new approach requiring a single, integrated application for all activities within a project instead of separate ones for each activity. This new approach gives a clearer picture of the broader impacts of energy development.

Issued *Directive 086*, which strengthened public safety and environmental protection by introducing new subsurface reservoir containment rules for projects in the Athabasca area.

Worked with indigenous elders to develop *Voices of Understanding*, a document about using indigenous oral decision-making to help improve interactions between the AER and indigenous people.

Culminated years of commitment to Peace River-area residents by releasing new requirements to control gas emissions from heavy oil and bitumen operations in the region.

Partnered with Mexico to create the International Centre of Regulatory Excellence—a not-for-profit institution to help regulators worldwide train, collaborate, and innovate.

Developed the Industry Performance Program and released a detailed report on pipeline performance.

Launched the Enterprise Learning Branch to provide coordinated and standardized training to ensure AER employees have the necessary skills and knowledge to do their jobs well.

4053
reclaimed sites

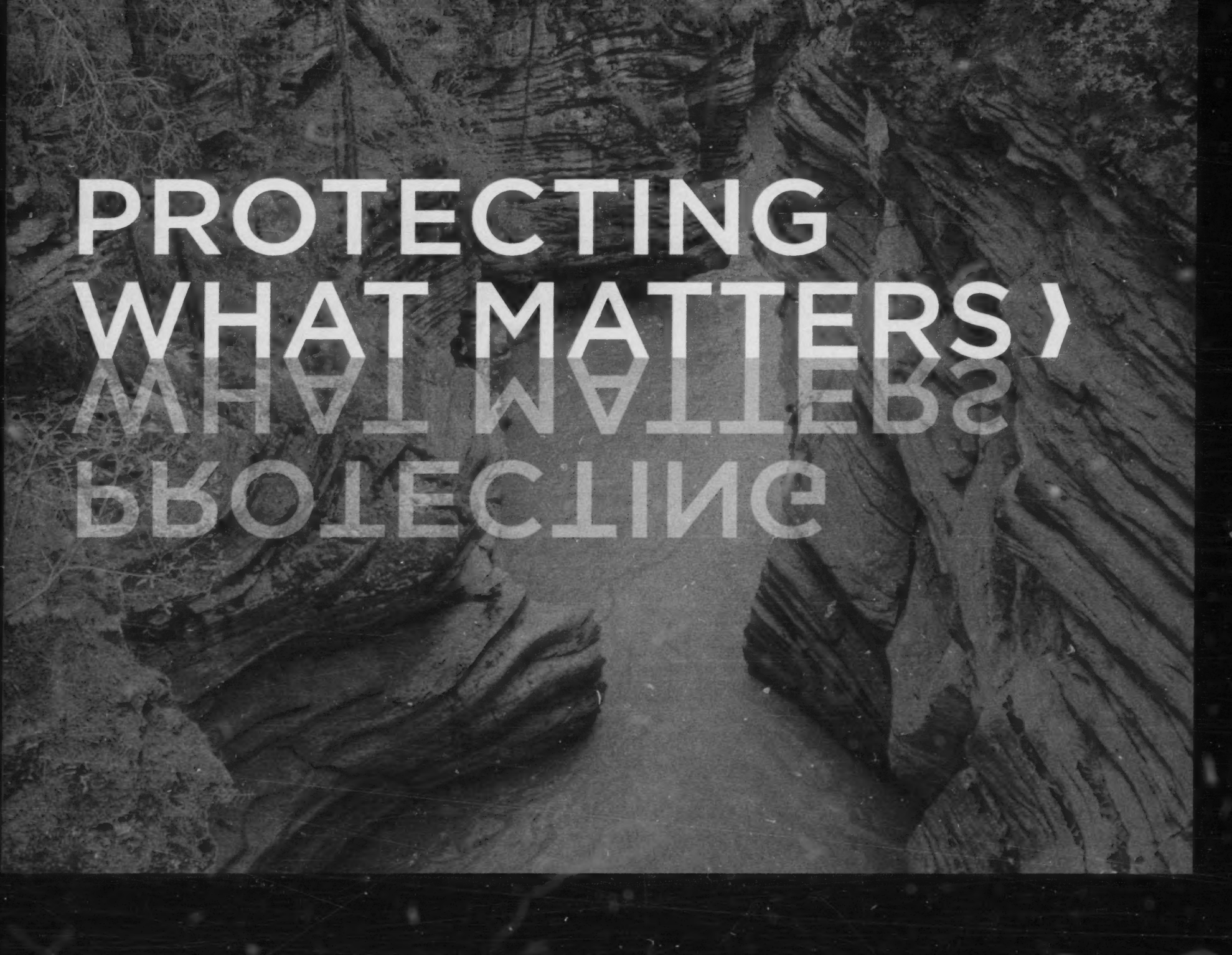
Issued 4053 reclamation certificates, confirming that companies met all requirements to reclaim an energy site.

82%
77%

82% of Albertans and 77% of stakeholders expressed confidence in the AER.

reduce by 3%

Exceeded our target to reduce pipeline incidents in 2016 with a drop of 3% to 1.1 per 1000 km.


PROTECTING
WHAT MATTERS

a protective, effective, efficient, and credible regulator

The AER oversees all oil and gas, oil sands, and coal development throughout the entire life cycle—from initial exploration, to operation, right through to closure, which includes reclamation and remediation.

This comes with tremendous responsibility; the Government of Alberta trusts the AER with making sure that energy development is carried out in a way that ensures that the public and the environment are protected and that Albertans receive the greatest value from their resources. For this reason our four strategic priorities are protective, effective, efficient, and credible.

The AER's core business is to develop regulatory requirements around energy development—taking direction from government policy—and enforce these requirements. This is how we protect what matters to Albertans—our air, land, water, and biodiversity.

In the last year, we've developed the Industry Performance Program and released a detailed report on pipeline performance. Pipeline incidents dropped to 1.1 per 1000 km while we exceeded our target to reduce high-consequence incidents.

In addition, the AER works to ensure that our requirements effectively address odours and emissions from energy facilities; in 2016 we worked with Alberta Health on a study into air quality and odour concerns near Fort McKay and made 17 recommendations to improve conditions. We also concluded years of commitment to Peace River area residents by releasing new requirements for controlling gas emissions from heavy oil and bitumen operations in the region.

The AER understands that its regulatory requirements affect industry's ability to develop Alberta's resources in a timely and efficient manner. We continue to examine the efficiency of our requirements—eliminating ones that are outdated or redundant or that fail to adapt to current technological trends—all while ensuring that operations are safe and the environment is protected.

We also work to be a credible regulator by seeking better ways to engage with stakeholders, which include indigenous communities. This work has included strengthening relationships with indigenous groups and providing awareness training to AER staff across the organization.

Through these and other efforts, the AER is fulfilling its role as a regulator that is protective, effective, efficient, and credible.

Over the last year we

- developed the Industry Performance Program and released a detailed report on pipeline performance,
- saw pipeline incidents drop to 1.1 per 1000 km,
- made 17 recommendations to improve air quality and odour conditions near Fort McKay, and
- strengthened relationships with indigenous groups and provided awareness training to AER staff across the organization.

a new way of learning

How do you prepare for the challenges you can't foresee? This is the question we asked ourselves when the AER's path to regulatory excellence was carved in 2016.

But without eyes and ears to predict the future of energy regulation, preparing for it seemed like a difficult task.

The AER's research identified three core attributes that would bring us closer to achieving excellence: utmost integrity, empathic engagement, and stellar competence. The last one posed a problem.

Alberta Energy Regulator

"At the time, we weren't sure we had the resources to fulfil the 'stellar competency' piece, which requires us to look at whether our people have the best skills needed to adapt to new risks and opportunities in the regulatory realm," reflects Aniko Parnell, director of the Enterprise Learning Branch (ELB). "Although we had some training in place, there was room for us to improve."

"We had to ask ourselves, what's next? How can we get ahead of the things we can't see, so that our people are resilient and our organization is prepared to act in the face of new direction and innovation?"

Enter the ELB—a team born to answer the unknown. Its purpose is to reshape how the AER approaches learning so that our in-house experts are better equipped to take on challenges that don't exist yet—be they challenges that stem from technological advances, changes in government policy, or unprecedented ideas in energy development.

"In our quest to become an excellent regulator, opportunities to improve ourselves are important."

—ANIKO PARNELL,
Director, Enterprise Learning Branch

"In our quest to become an excellent regulator, opportunities to improve ourselves are important," Parnell says. "Improving how we adapt to new risks and opportunities will result in increased confidence in the AER's ability to fulfil our mandate."

What will that look like in action? That answer is still to come. But the team has already taken steps to define the unfamiliar in order to make learning more impactful, adaptive, and timely. Steps to "fill the gaps" have included seeking feedback from AER staff, forming a governance committee to become the eyes and ears of technical and regulatory changes, and tracking where employees pursue their learning beyond our walls.

While there's much to do, Parnell acknowledges the importance of this new direction. Life-long learning is the new norm; just as the news cycle never sleeps, neither does the pace of innovation. AER staff must be prepared to learn new skills and gain new knowledge when we need it, as we need it.

how a mapping tool helped battle a beast

When wildfires struck northeast Alberta last May, Eileen Rubiera and her team were putting the finishing touches on the AER's new reclamation certification mapping tool. Little did anyone know, the technology would help fight the blazing beast.

In 2016, the AER implemented a new process to test the Integrated Decision Approach technology to manage a backlog of reclamation certificates. The technology—called OneStop—ensures that all criteria for reclamation are thoroughly assessed in a timely manner, which in turn would allow AER staff to dedicate more resources to ensure that high-risk areas and reclamation-certificate applications receive greater attention.

That's what the tool was designed for. But Rubiera, a geographic information system (GIS) manager with the AER, understood the difficulty in mapping a disaster such as a wildfire—there's just too much information to keep track of at once. That's when an idea sparked: why not apply the newly created technology to map the danger zone?

"We had maps of the land and all of the oil and gas facilities in the wildfire zone," says Rubiera. "We knew that if we could add the fire's environmental information (wind direction and speed, weather conditions, satellite data such as fire locations), the AER's tool would be able to show a complete, real-time view of the fire."

The result? Within a day, the AER had designed a one-of-a-kind fire map viewer that could show details about the wildfire's size and spread; environmental factors like wind speed, air quality, and weather conditions; and the oil and gas facilities and other critical infrastructure in the Fort McMurray area—all in real time.

The AER reached out to other agencies across Alberta, including the Government of Alberta, Environment Canada, Natural Resources Canada, and industry, all of whom were quick to jump on board and provide their specific GIS information for the mapping tool.

The tool was initially used for response and recovery efforts by several parties: the Government of Alberta, the Provincial Operations Centre, the AER's Emergency Coordination Centre, and even some small-to-mid-sized companies lacking their own GIS capabilities.

It also helped first responders make decisions around evacuations and protection of critical infrastructure. And when the initial dangers had subsided, the mapping tool helped determine re-entry triggers for industry operators.

"There's no doubt in my mind—these maps made a significant difference in how this fire was fought," says Rubiera.

big promise for a big play

DUVERNAY FORMATION

353-540 *Tcf natural gas*
total in-place resource

44-83 *billion bbl oil*
estimated resource

8-16 *billion bbl natural gas liquids*
estimated resource

Alberta Energy Regulator

Can it all be tapped? That's the question on people's minds.

In late 2016, the AER revealed that the Duvernay Formation—a band of rock buried beneath the earth's surface that stretches from Alberta's foothills eastward across the province—hides vast energy riches.

Based on data from the Alberta Geological Survey, a branch of the AER, the report shows the total in-place resource for the Duvernay ranges from 353 to 540 trillion cubic feet (Tcf) of natural gas. The oil resource is estimated to be 44 to 83 billion barrels (enough to fill as many as 5.3 million Olympic-size pools), while the estimate for natural gas liquid is 8 to 16 billion barrels (up to 1 million Olympic-size pools).

But how much of these massive volumes are likely to be recovered?

"What's recovered or developed depends on a number of factors, like drilling and completion optimization, costs, commodity pricing, social, environmental and regulatory constraints," says Krista Beavis, a reservoir geologist with the AER.

The research provides an estimate of what portion of the total in-place estimates can reasonably be booked as reserves in the next 30 years (the common forecast period the AER uses, based on numerous factors)—remaining proved plus probable reserves of 38 million barrels of oil and 1.2 Tcf of gas.

The Duvernay is a relatively new area of development, though it's seen more and more multistage horizontal wells since 2011. To the end of 2015, more than 220 gas wells and 20 oil wells had been drilled.

And with Alberta's oil sands for a neighbour, the liquids-rich Duvernay is positioned for growth. Condensate (a liquid) is used to dilute the thick bitumen that is pulled out of the oil sands for ease of transport in pipelines.

While this is the first report of its kind, the AER plans to release additional data for the Montney and Cardium Formations.

technology and the AER

The AER isn't typically in the business of cool, but a closer look at the gadgets we use to do our job could make even the tech-savviest do a double take.

The fact is, technology plays a critical role in helping us protect Albertans as we monitor oil and gas activities, and it is making our systems more accurate and effective.

"Technology isn't advancing just for the sake of itself. The better we are at monitoring activity, the better we are at preventing incidents," says Al Duben, air specialist with Surveillance & Enforcement at the AER. "And with better monitoring technology we are more prepared to better manage incidents if they occur."

EYE IN THE SKY

Our newest aerial monitoring device—the first of its kind in North America—is the optical gas imaging (OGI) drone. It features two cameras, one of which is infrared, which enables us to see hydrocarbon gases. It allows us to measure low levels of gas that we've never been able to measure before.

The OGI also has three-dimensional (3D) modelling capability. While photogrammetry—the science of taking measurements from photographs—is not new to the AER, it previously had to be done from a plane or helicopter.

"From the palm of our hand we'll be able to see oil on the surface of water if there's a spill. The 3D mapping then enables us to predict where the oil is likely to flow so that we can actually get ahead of the spill," adds Duben.

The OGI can also feed live information to a specialized computer that will produce 3D renderings within a couple of hours rather than days.

LASER TAG

Another new device, the laser gas detector (LGD), identifies gas by projecting infrared light through the air with fingerprint accuracy. Lightweight and portable, it's used to measure methane, which is odourless and very difficult to detect.

"Methane is important because when it's detected there's a very high chance that a lot more is going on and we've just scratched the surface of toxins," says Blair Reilly, manager of Emergency Management at the AER.

The LGD allows the AER greater precision when targeting specific locations for investigation. Previously, we relied on complaints from the public about general areas of concern, or industry's own detection efforts, but now we have data as proof of where we need to focus our efforts.

clearing the air

Reducing odorous emissions from oil and gas operations does not have a one-size-fits-all regulation. As the energy regulator, we receive odour complaints from residents and do our best to find where these emissions are coming from and what the impacts are.

Sure, there may be an obvious source such as a flare stack, but what about emissions that have no obvious source?

"When we find the source, we take action," says Christina Winarski, Slave Lake Field Centre manager of Surveillance & Enforcement with the Environment & Operational Performance Branch.

TAKING ACTION IN PEACE RIVER

The AER has issued strict requirements for heavy oil producers in the Peace River area to follow in *Directive 084: Requirements for Hydrocarbon Emission Controls and Gas Conservation in the Peace River Area*. Heavy oil in the Peace River area is heated in tanks, and emissions of excess gas are released, causing an increase in the number of odour complaints from nearby residents. To address this, the new rules include a complete ban on routine venting, and operators will be required to conserve at least 95 per cent of gas that would normally be vented, flared, or incinerated.

The directive also puts strict rules on reducing emissions off lease.

"Based on our findings that odour-causing emissions were coming from other areas away from the tanks, such as leaking equipment or during truck loading and unloading activities or wear and tear, we realized that to be effective, this directive must go one step further and regulate the fugitive emissions that are unintentionally released," says Winarski.

The new directive was developed in response to a 2014 proceeding that was held in Peace River to address odours and emissions and that resulted in 20 recommendations.

RESPONSE IN FORT McKAY

Responding to recurrent complaints from Fort McKay residents, the AER and Alberta Health conducted a year-long study about air quality and odour impacts from oil sands mining operations and released a report of findings in September 2016. The study found that the air in Fort McKay does at times contain emissions that exceed odour and health thresholds, and that response protocols for odour and air quality complaints must be improved.

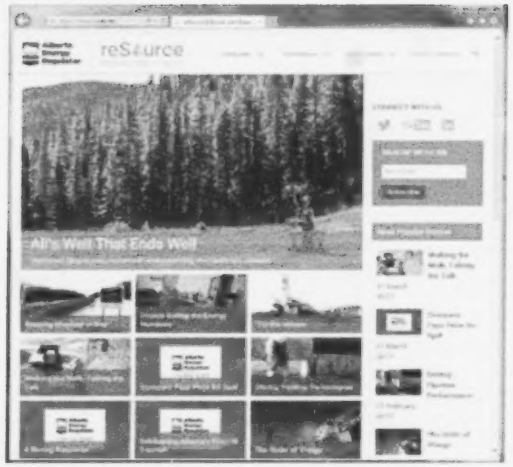
The report made 17 recommendations that will be implemented. The AER and Alberta Health recommendations focus on improving air-quality monitoring to better understand emission sources, and on further investigating the potential long-term health effects of emissions.

These recommendations will be implemented over the next few years and will be led by a multistakeholder group that includes the AER, government, Fort McKay First Nation, Fort McKay Métis, industry, and other partners.

FLOWBACK STUDY

What's next on the horizon? The AER has initiated a study with Alberta Health to better understand the potential environmental and health risks of air emissions from the flowback phase of hydraulic fracturing activities. Learn more about the study on page 28.

a window on the AER



The business of keeping Alberta's energy industry on the straight and narrow can be a complex one. To wade through the complexities, the AER employs engineers, geoscientists, lawyers, environmental scientists, and other experts who help develop and enforce the rules that ensure oil and gas development is safe.

In their jobs, these professionals often speak a technical, specialized language that can seem confusing for many—even for some who work here. To reduce the confusion, we constantly look for better ways to share our stories, a good example being the "Resource" news and information site, launched in June 2016.

"Albertans have told us many times that they want to learn more about our work," says John Ludwick, manager and editor-in-chief of Content and Publishing. "So being transparent by sharing our stories is a priority."

Being transparent doesn't mean simply posting technical reports and data on a website; it means reframing this information in ways that are accessible to everyone and that make for a good read.

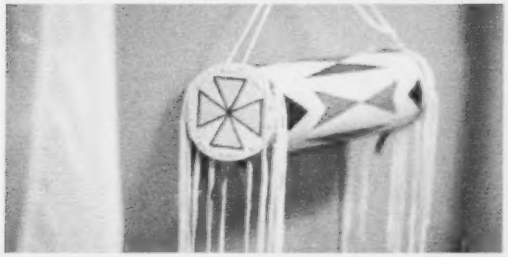
Resource accomplishes this by sharing weekly stories, photos, infographics, and videos that bring life to timely topics and issues and to how the AER is involved in addressing them.

With dozens of stories organized into four categories—environment, safety and enforcement, community, and "Good2Know"—Resource offers a variety of useful information about the energy industry, the AER, and our work.

From the get go, we relied on the theory, "if we build it, they will come." By providing Albertans, stakeholders, and those outside our province with a clearer window on our world, we believed they would feel more confident that Alberta's massive energy resource is well regulated.

To the end of March, close to 30 000 people have visited the site; those visitors have viewed more than 76 000 pages. Better yet, our 2017 public opinion research suggests that more than ever, Albertans are learning about the AER through online sources, including Resource.

"We hope that by understanding our unique role in the energy sector, people will feel confident that we're ensuring public safety and protecting the environment," says Ludwick.



We know indigenous peoples want their voices reflected in our decisions. We need to work together to find solutions while being mindful of our cultural differences. However, many of our processes fail to link western and indigenous worldviews—this prompted the AER to set out on a path to increased understanding.

WHEN voices matter

All of our voices matter.

Whether we speak in unison or one at a time, in one language or another, in harmony or in discord, we all have the right to be heard. This is true in the classroom, in the workplace, and at home. The regulatory field should be no different.

We know indigenous peoples want their voices reflected in our decisions. We need to work together to find solutions while being mindful of our cultural differences. However, many of our processes fail to link western and indigenous worldviews—this prompted the AER to set out on a path to increased understanding.

We made it our mission to build a new type of working relationship—one based on trust and mutual understanding—and challenged ourselves to look beyond what we know.

Blackfoot elder Dr. Reg Crow Shoe was our guide on this journey. With his leadership and teachings, AER employees explored how indigenous processes and worldviews can complement our own. Specifically, the sessions explored traditional circle decision-making, a method that can be used to make decisions or to resolve conflict.

AER employees came to understand the ways that circle management processes are mirrored in hearings, alternative dispute resolution, and mediation processes we have in place today.

"There are applications, leaders, and proper times to speak," says Barbara McNeil, an AER hearing commissioner. "In many ways, circle decision-making echoes what we want to achieve in mediation."

Circle decision-making begins with an opening statement from the ceremonialist, who brings together people from the involved parties. The ceremonialist has the great honour of being the steward of the bundle—a physical and symbolic representation of the right to carry out decisions from circle processes. That right can only be transferred through ceremony.

Before discussions begin, participants cleanse their minds, bodies, and spirits in a smudge ceremony. This ceremonial practice includes lighting dried herbs in a bowl or bundle to produce smoke.

Next, each circle participant discusses the issues at hand. A second round of discussions seeks solutions. Understanding is built as participants gather in a circle and take turns speaking, facilitating a safe environment for people to share their knowledge and experiences. Each voice is equal. The circle process doesn't end until a consensus or a decision is reached.

We explored our new awareness of this process with Dr. Crow Shoe, and together we created *Voices of Understanding: Looking Through The Window*, a guide intended to help AER staff and indigenous communities understand how to draw parallels between western and indigenous decision-making.

In an intimate circle ceremony hosted in the AER's Govier Hall, Dr. Crow Shoe transferred the rights to the bundle containing the knowledge and process behind *Voices of Understanding* to AER president and CEO Jim Ellis.

Voices of Understanding prompts us to genuinely consider the way we think and work and the processes, systems, and initiatives we use. On our quest to achieving regulatory excellence, this bundle does not symbolize completion but rather a step further in our journey to awareness and validation of indigenous decision-making.

This is but one piece in the foundation as we improve our working relationships with Alberta's indigenous people. To carry this knowledge is a responsibility we are honoured to accept.

BUILDING relationships with indigenous communities

As a country, we're gaining a greater understanding of the challenges our indigenous communities face.

We can't take back the past, but our journey towards truth and reconciliation calls on us to recognize our shortcomings and work together to build a new relationship based on mutual understanding and trust. That's why the AER's Indigenous Engagement Group is figuring out how we can do more to improve our relationships with indigenous communities across the province.

Building deeper, long-lasting partnerships with Métis and First Nations communities is more than something we have to do—it's something we want to do to improve how we deliver on our regulatory mandate. Indigenous peoples steward Alberta's land, air, and water, so it's important for the AER to acknowledge the parallels between our worldviews and explore how we can work together from a place of trust and mutual respect.

Over the last year, the AER's Indigenous Engagement Group laid the groundwork for what lies ahead. Its work included delivering more indigenous awareness training sessions for AER leadership and staff, organizing a gathering of Treaty 7 and AER executive leadership, and demonstrating a collaborative approach to engagement.

Ongoing projects include working with indigenous communities on area-based regulation (ABR) and reaching out to the Woodland Cree First Nation to start a joint learning process regarding land reclamation, remediation, and indigenous traditional knowledge. These are just a few of the first steps taken to implement the *Truth and Reconciliation Commission of Canada: Calls to Action* and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), and to work with communities to ensure that traditional knowledge is reflected in our day-to-day process and decisions.

"It's important that AER employees recognize the significant insight that the indigenous people of Alberta can bring to our processes."

—ARLETTE MALCOLM,
Director of Indigenous Engagement

We also understand that to be the change we wish to see in the world, our organization must commit to change.

"It's important that AER employees recognize the significant insight that the indigenous people of Alberta can bring to our processes," says Arlette Malcolm, director of Indigenous Engagement. "To become an excellent regulator, we need to be able to engage empathically; this means we need to listen to and understand the values and concerns of our stakeholders, including Alberta's indigenous people. We need to build a relationship of listening, mutual respect, and trust."

This responsibility is not without challenges. Our annual surveys of Albertans indicate that First Nations and Métis communities show less satisfaction and less confidence in the regulator than do our other stakeholder groups. It also indicated that we do not adequately address indigenous communities' concerns about the environment. We know we have growing to do.

The AER hopes to learn from indigenous people about how we can collaborate to validate traditional knowledge and traditional land-use values and link them with our existing practices. This is an essential stepping stone towards understanding and addressing cumulative effects.

The AER will also evolve its processes to better support a holistic approach to energy development—one that is mindful of both indigenous and western knowledge—in our Woodland Cree indigenous traditional knowledge and ABR projects, among others.

The AER is honoured to practise the lessons from the *Voices of Understanding* process and further our understanding as we look ahead at how we can move forward together.

Voices of Understanding
After listening closely to the stories shared by Blackfoot elder Dr. Reg Crow Shoe, AER staff came away with a fuller understanding of traditional decision-making models and how we can integrate them into our day-to-day processes.

enforcing the rules

"The AER's investigators are peace officers; they have the authority to apply for search warrants, lay charges, and serve companies or people court summonses. These people are law enforcement."

—GREG JONES, Manager, Major Investigations Team

When companies fail to follow the AER's rules, they face enforcement. This can include shutting in operations, more frequent and detailed inspections, or more stringent planning requirements.

In some cases, it can also mean paying a stiff fine or facing prosecution.

All noncompliances are reviewed and the most serious referred to AER investigators. An AER statutory decision-maker then reviews the investigation report and decides whether enforcement is required, and which is the most appropriate enforcement tool.

PROSECUTIONS

"The AER's investigators are peace officers; they have the authority to apply for search warrants, lay charges, and serve companies or people court summonses," says Greg Jones, manager of the AER's major investigations team. "These people are law enforcement."

While prosecutions take place in a courtroom, AER investigators draft the court documents that list the charges and include a summons requiring the company to appear in court by law. Once signed by a justice of the peace, they become official, and an AER investigator delivers them, in person, to the company.

When charges are laid, both the Crown prosecutor and defence counsel get to review the entire AER investigation file. If a trial is held, AER investigators testify about their involvement in the matter. The court, not the AER, is responsible for deciding what happens; the decision to penalize a company rests with a judge.

ADMINISTRATIVE PENALTIES

Another enforcement tool is a fine, called an administrative penalty. The amounts differ, but all are based on the seriousness of the offence and how it affects public safety, the environment, or production of the energy resource.

In short, the more serious the contravention and the greater the impact, the higher the penalty.

ORDERS ENSURE COMPLIANCE

AER orders are legal documents that formally direct a specific action or actions; they can be issued for different purposes. Orders help the AER ensure that oil and gas companies operate in a safe and environmentally responsible way.

The most commonly issued order is referred to as a compliance order, which is designed to prevent, stop, or minimize environmental impacts or risks to public safety. An order may also be punitive in nature and may be used to reprimand companies that don't follow AER rules and regulations.

At the end of the day, Albertans own our energy resources, so developing them is a privilege, not a right. Every company must follow the rules to make certain that oil and gas activities happen safely.

pipeline performance

Pipelines have been a hot topic for some time in Alberta and across North America, with the big question being, are they safe?

In our province, the numbers show they're safer than ever. Still, the AER's executive vice president of operations knew that more could be done to improve pipeline safety, and that the solution wasn't to just craft more rules.

"We're not going to improve performance by adding more pages to the *Pipeline Act*," Kirk Bailey noted, knowing that more could be done to improve pipeline safety beyond crafting more rules.

This past February, the AER released a report revealing how pipeline operators are performing—with details not only on the sector as a whole but on individual companies as well.

While the length of pipelines the AER regulates grew by 11 per cent in the last decade, pipeline incidents actually dropped by 44 per cent, with the pipeline failure rate dropping to 1.1 incidents per 1000 kilometres of pipeline in 2016 compared with 2.2 incidents per 1000 kilometres in 2007.

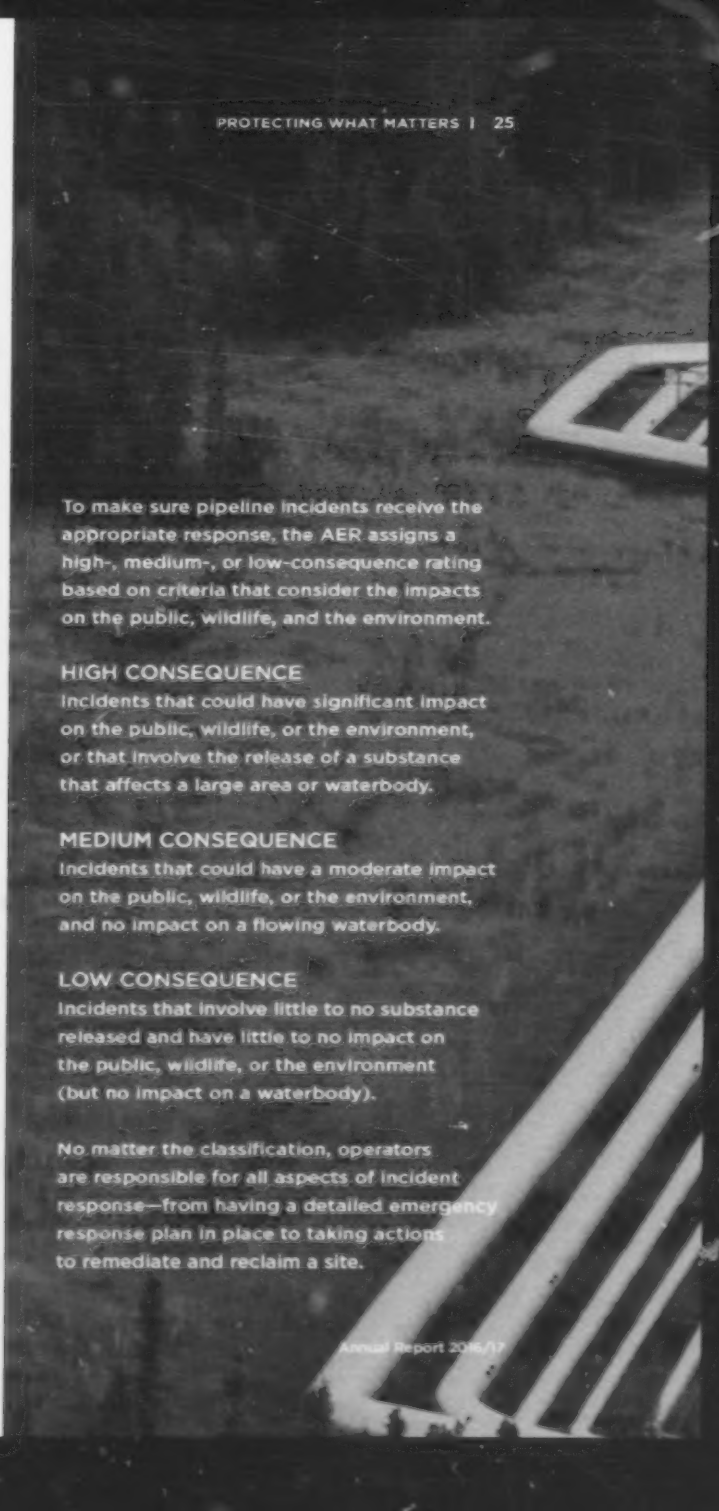
The AER points to stronger requirements, industry education, improvements to inspection programs, and a greater focus on pipeline safety among operators for the improvement.

The report showed that pipeline incidents dropped by three per cent in 2016 compared with 2015. Most incidents were of medium to low consequence in terms of impacts on the public, wildlife, and the environment. High-consequence incidents accounted for about 7 per cent of all incidents in 2016.

While the decline in incident rates is encouraging, the AER believes all pipeline incidents are preventable—especially high-consequence ones. Achieving this will take a big effort in many small steps: in 2017 the AER aims to reduce the two-year average of high-consequence pipeline incidents by two per cent.

The AER will continue to raise the bar each year and take action to ensure that performance steadily improves.

The pipeline report was the first to be released, but it will not be the last. The AER will issue similar reports that will cover water use in energy development and inactive wells.



To make sure pipeline incidents receive the appropriate response, the AER assigns a high-, medium-, or low-consequence rating based on criteria that consider the impacts on the public, wildlife, and the environment.

HIGH CONSEQUENCE
Incidents that could have significant impact on the public, wildlife, or the environment, or that involve the release of a substance that affects a large area or waterbody.

MEDIUM CONSEQUENCE
Incidents that could have a moderate impact on the public, wildlife, or the environment, and no impact on a flowing waterbody.

LOW CONSEQUENCE
Incidents that involve little to no substance released and have little to no impact on the public, wildlife, or the environment (but no impact on a waterbody).

No matter the classification, operators are responsible for all aspects of incident response—from having a detailed emergency response plan in place to taking actions to remediate and reclaim a site.

finding our core strength: creating ICORE

This independent entity—borne from the AER's Regulatory Excellence initiative—will enable regulators to exchange best practices, advance their collective body of knowledge, and train both emerging and established regulators from around the world.

Canada and Mexico. *México y Canadá*. No matter if you say it English or Spanish, our countries enjoy a long history of political, trade, social, environmental, and security shared interests that date back to the 1994 North American Agreement on Environmental Cooperation and the 2004 Canada-Mexico Partnership.

In February 2017 the AER played a key role in yet another important collaboration. Together with the Government of Mexico, we announced the formation of the International Centre of Regulatory Excellence, or ICORE.

It was easy to think that the partnership was really no big deal. Except that it was. When we see people supporting one another, we call it philanthropy; when a regulator does it for other regulators, we call it regulatory excellence.

"Our ability to effectively manage energy development and environmental protection in Alberta depends increasingly on our engagement beyond provincial borders," explains the AER's president and CEO Jim Ellis. "ICORE gives Canada the opportunity to continue advocating for cooperation in the regulatory community on a global stage."

This independent entity—borne from the AER's Regulatory Excellence initiative—will enable regulators to exchange best practices, advance their collective body of knowledge, and train both emerging and established regulators from around the world. The AER is a regulator, not a trainer, therefore the creation of ICORE can address work that's beyond our mandate.

In the future, the AER can both contribute to and use this centre of excellence as a hub for training and innovation. Ultimately we believe this will lead to overall stronger and more protective regulators the world over because, as experience tells us, there is strength in numbers.

how a penny saved became two billion dollars earned

We knew there were savings to be had, but we didn't know how much.

However, three years and nearly two billion dollars later, the AER's efforts to make our regulatory requirements more efficient have translated into real-world savings for an energy industry beset by low commodity prices.

But it wasn't a response to oil prices that spurred us to examine our requirements through a different lens and spot opportunities to make improvements. Work to make requirements more efficient started in April 2014 as part of a bigger strategy to improve how the AER regulates. Since this time, the AER has generated over $1.9 billion in total cost savings for industry without reducing environmental protection and public safety rules and regulations. A portion of these are one-time savings, while the remainder are savings that recur each year and help ensure that Alberta's regulatory system remains efficient and effective.

To the end of March 2017, the AER has delivered over $774 million of industry-verified cost savings that recur annually through regulatory efficiency improvements. This means each year Alberta's energy industry saves over three-quarters of a billion dollars. In 2017/18, we are targeting additional savings in the order of $100 million.

So why do it? Besides the fact that creating efficiencies and a more competitive environment was a driver for merging three regulatory bodies to form the AER, our efforts bring benefits to industry such as lower operating costs, lower capital costs, and fewer regulatory delays. This allows companies to bring projects into operation faster, which in turn provides economic benefits to Alberta.

But more important is that regulating with outdated or ineffective regulation doesn't make Alberta safer. In fact, it could tie up our resources on low-risk issues and hinder action where the risks are greater. Creating efficiencies makes development safe, protects the environment better, and helps the economy. In this way, everyone affected by energy development—be they public stakeholders, indigenous communities, or Albertans in general—benefit from more efficient and effective regulatory requirements.

Making the regulatory system more efficient can be complicated, but here in Alberta it's made somewhat easier because we have only one regulator, not multiple ones with competing interests.

The savings we've achieved have been significant, and because they are applied to operations year over year, the value of this regulatory efficiency work will be realized by industry and Alberta for the next 30 years and beyond.

finding what's in the flare

Necessity is the mother of invention, or so the saying goes.

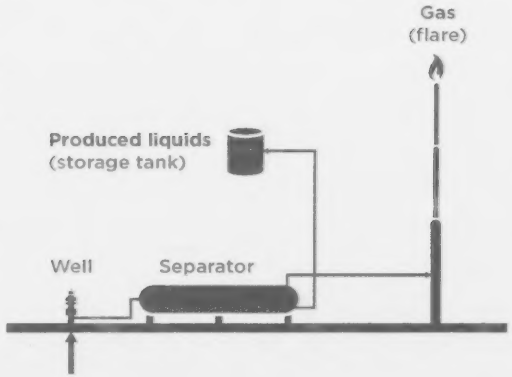
This past year, mother necessity gave birth to a study—being led by the AER and Alberta Health—into what types of substances are present during the "flowback" phase of hydraulic fracturing operations.

"Flowback" refers to the process by which fluids used to fracture a well are pumped back to the surface after hydraulic fracturing is complete. Separators split out the liquids and any oil from the gas; the liquid goes to a tank where it's disposed of, while the gas is burned in the flare stack.

The study is the first of its kind and looks at the composition and concentrations of the substances in the flowback stream, the properties of the flare during the flowback phase (such as flare temperature), and whether these substances present during this process pose a risk to human health and the environment.

Other questions being answered are, what happens to the gases? Are they released into the atmosphere? Are they destroyed by the heat of the flare? Or have they transformed into another substance?

The investigation was prompted by an AER assessment of recurring complaints from residents in the Lochend and Didsbury areas of Alberta about hydraulic fracturing activities. The assessment found a knowledge gap about what emissions are generated by flaring in the first stages of bringing a new well into production.



Because no new development was occurring in these areas at the time, the AER began testing wells around Drayton Valley and Rocky Mountain House that were being drilled into the Cardium geological formation, the same formation being developed at Lochend and Didsbury.

AER experts designed a study to collect samples between the separator and the flare stack during the flowback period. Samples were then sent to a lab to identify what substances are present.

Besides the AER and Alberta Health, other participants include InnoTech Alberta (part of Alberta Innovates), industry representatives, Alberta Environment and Parks, a public representative from the study area, and one of Canada's top flare researchers from Carleton University.

Once the study is complete, a report will follow. From there the AER will decide what, if any, changes will be made to the regulatory requirements.

The study is the first of its kind and looks at the composition and concentrations of the substances in the flowback stream, the properties of the flare during the flowback phase (such as flare temperature), and whether these substances present during this process pose a risk to human health and the environment.

for everyone's benefit

It's rare that a change can benefit everyone, but when it happens, it leaves one wondering why the change took so long in the first place.

The creation of the AER was one such change—it brought together all energy-related regulatory activities under one umbrella. Being responsible for all spill response and clean up has allowed us to be more effective in our approach to remediation, which benefits landowners, the energy industry, the regulator, and Albertans in general.

"Previously, the regulatory agencies had different pieces of the puzzle. There were different computer systems, different compliance structures, and different legislation," said Sandra Blais, an advisor with the AER.

Historically, contamination was allowed to remain in place until the site was decommissioned. But the AER has taken a different approach, requiring more active clean up at the time of a spill instead of waiting for decommissioning, which reduces the likelihood of contamination migrating over years in underground plumes.

While Blais said monitoring a spill and remediating in the location instead of immediately removing contaminated soil works well for some spills, in most cases the longer it remains in soil, the greater risk it will contaminate groundwater.

This change also means the land is returned back to what it was before the spill—farmland, forest, or grassland—much quicker.

The benefits also apply to the ones responsible for the spill.

"Cleaning up spills immediately can mean a cost savings to industry," said Sasha Desjardins, manager of Remediation, Contamination Management, and Reclamation. "For industry to do nothing is the most expensive option."

Companies can remediate a spill before it spreads and forego the cost to continually monitor the spill.

Energy companies need to prove to the AER that they have the financial ability to return the land back to a comparable state to what it was before energy development. So for the AER, these changes allow us to better assess how much it may cost companies to clean up once their facility is no longer needed for energy development.

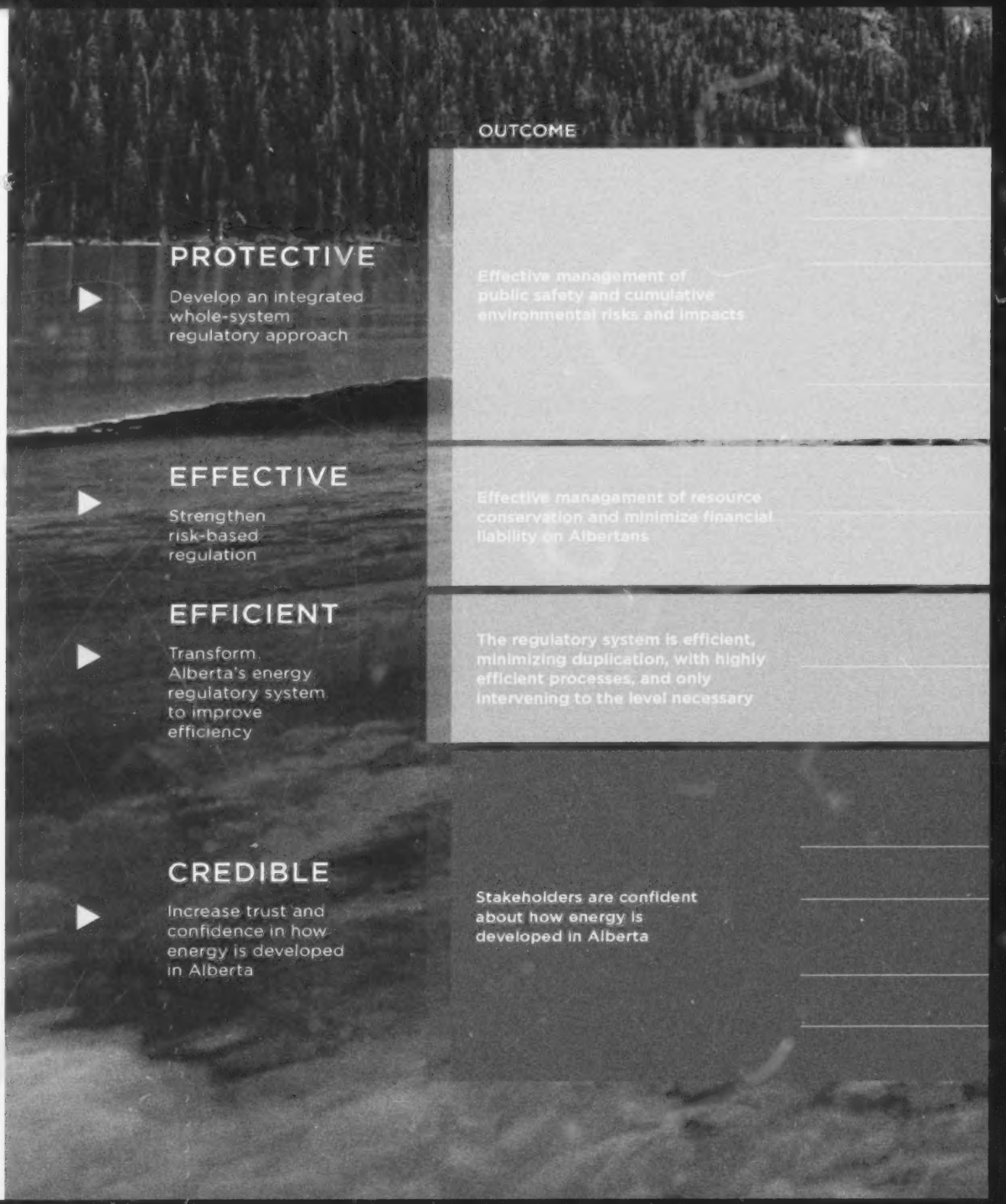
Better data on spill cleanup costs make our calculations much more accurate and can sometimes involve an energy company needing to pay financial security to the AER that can be used to clean up any spills if the company goes defunct. That means the company—not Albertans—is held responsible for cleaning up energy infrastructure and their associated sites. And that benefits all Albertans.

2016/17 REPORTING ON OUR RESULTS

Since the AER's launch in 2013, we have promised that we will be transparent. Keeping that promise requires us to report on our results by showing where we have made progress over the last year, how we are working towards meeting the goals we have set, and what challenges we have faced that may have caused us delay.

The 2016–19 strategic plan was developed by examining the work we need to focus on based on our four pillars of protective, effective, efficient, and credible. The plan included our strategic priorities, outcomes, and performance measures to ensure that we stayed on track and demonstrated our results. Like the AER itself, the 2016–19 plan was fluid enough to allow us to remain nimble in an ever-changing energy sector, and was designed to move with the ebbs and flows throughout the year.

The targets we set for ourselves in the strategic plan, such as reducing fluid tailings accumulation, lowering oil sands' emissions, and improving the application process, all tie back to our commitment to regulatory excellence—achieving it and living it as we work toward it.



	OUTCOME
PROTECTIVE Develop an integrated whole-system regulatory approach	Effective management of public safety and cumulative environmental risks and impacts
EFFECTIVE Strengthen risk-based regulation	Effective management of resource conservation and minimize financial liability on Albertans
EFFICIENT Transform Alberta's energy regulatory system to improve efficiency	The regulatory system is efficient, minimizing duplication, with highly efficient processes, and only intervening to the level necessary
CREDIBLE Increase trust and confidence in how energy is developed in Alberta	Stakeholders are confident about how energy is developed in Alberta

MEASURE	TARGET	STATUS
Volume of all water used (by source) for hydraulic fracturing, enhanced oil recovery, in situ oil sands, and mineable oil sands	Public reporting of water use by industry	**On track:** Scheduled for spring 2017.
Total annual volume of fluid tailings, treated fluid tailings, fines captures	Ensure industry complies with established performance standards	**In progress:** Revisions to *Directive 085* being made to include public input. Expected in 2017.
Volume of methane emissions	Support multistakeholder engagement process to facilitate early action on methane reduction	**Target met:** Multistakeholder process has been created and is being used to develop changes that will ensure a 45% reduction in methane by 2025.
	Ensure industry complies with established performance standards	**In progress:** Draft regulatory development is 60% complete, ahead of targets.
Volume of oil sands emissions	Establish a tracking and reporting system for oil sands emissions	**On hold:** Provided input to the Oil Sands Advisory Group. Awaiting government response.
Complete a risk assessment of energy-related infrastructure by March 2018	Address high-risk items as they are identified	**In progress:** 96% of high-risk wells have been brought into compliance through *Directive 013*, and the Inactive Well Compliance Program has achieved 56% compliance.
Number of high-consequence pipeline incidents	2% reduction in high-consequence pipeline incidents from the previous two-year average	**Target met:** 24% reduction in high-consequence pipeline incidents.
Stakeholder savings resulting from reduced regulatory burden that does not negatively impact the environment or public safety	$100 million in savings to stakeholders in fiscal 2016/17	**Target exceeded:** $224 million in savings to stakeholders due to organizational efficiency projects.
Improve efficiency of AER application decisions	Conduct two pilot projects to evaluate the proof of concept for the single application and approval process by March 31, 2017	**Target met:** Three pilot projects completed.
Percentage of Albertans aware of the AER who express confidence in the organization's ability to fulfil its mandate	80% confidence score	**Ongoing:** 82% of Albertans have confidence in the AER's ability to fulfil its mandate, while 77% of stakeholders express confidence, with varied rankings among specific groups (e.g., landowners, industry, and indigenous peoples).
Incorporate key attributes of regulatory excellence	Begin implementing the AER model for regulatory excellence	**In progress:** The Strategy and Development Branch was created. Developed internal systems to improve efficiencies.
Level of skills and competencies	Address high-priority skill and capability gaps through the implementation of a Centre of Regulatory Excellence in 2016/17	**Target met:** Created the Enterprise Learning Branch for AER employees. Launched the International Centre of Regulatory Excellence.
Employee engagement	Achieve 83% engagement in 2016/17	**In progress:** Launched many initiatives to improve employee engagement. Results to be determined in 2017/18.
Percentage of IRMS* strategic priorities supported by the AER	100% of IRMS strategic priorities supported by the AER	**Target met:** 100% of IRMS priorities supported by the AER.

*Integrated Resource Management Framework.

MOVING
FORWARD

a world-class resource

Alberta's energy reserves are among the world's largest and include bitumen, crude oil, natural gas, natural gas liquids, and coal.

Topping this list is bitumen from the province's oil sands deposits, with remaining established reserves of 165 billion barrels in 2016—truly a world-class resource. To put things into perspective, 12.3 billion barrels of bitumen have been extracted since the late 1960s.

At 897 million barrels per year (or 2.45 million barrels per day), raw crude bitumen production accounted for 84 per cent of Alberta's total crude oil and bitumen production in 2016. Bitumen production in 2016 decreased by 4 per cent for mining projects and by 2 per cent for in situ projects, resulting in an overall raw bitumen production decrease of about 3 per cent over 2016.

Of the total bitumen production, 42.5 per cent was used as feedstock for upgraders, yielding 887 thousand barrels per day of upgraded production. Alberta refineries processed 296 thousand barrels per day of upgraded bitumen and 22 thousand barrels per day of nonupgraded bitumen.

In Alberta, crude oil production decreased by 16 per cent in 2016. Conventional natural gas remaining established reserves were 28.2 trillion cubic feet (Tcf) in 2016, while total production was 3.8 Tcf. Total natural gas liquids production increased by 4 per cent in 2016.

In 2016, our remaining established reserves of coal decreased slightly to 36.6 billion tons, while only 28 million tons of marketable coal were produced.

Alberta's energy resources significantly contribute to both Alberta's and Canada's economies. In 2016, the value of our energy resource production was $56.1 billion. The AER forecasts that in 2017, the value of energy commodities will rebound to higher levels with the return of higher oil and natural gas prices.

ALBERTA'S RESOURCES (2016)

56.1 billion
value of production in Alberta

165 billion
remaining established bitumen reserves

897 million m³ = **84%**
raw crude bitumen production
Alberta's total crude oil & bitumen production

28.2 Tcf
conventional natural gas reserves

3.8 Tcf
total conventional natural gas liquids production

drivers for change

Today, development occurs on a larger scale, with projects having a greater footprint on the landscape from multiple wells and associated infrastructure—roads, facilities, and pipelines—a departure from the days of single wells scattered across the landscape. The AER is looking closely at how multiple energy activities will affect specific areas and at the cumulative effects of those activities over time.

Our world has changed significantly over the last decade, and we must keep pace to be a good regulator, let alone an excellent one. And achieving excellence is the AER's vision.

In the past, local stakeholders living near energy development—the people directly affected by oil and gas activities—were the ones voicing their concerns. Today, people the world over question the use of fossil fuels and demand action on climate.

Closer to home, the Government of Alberta's Climate Leadership Plan—which aims to reduce Alberta's carbon emissions—is well underway, while this past December the federal government and provinces announced the Pan-Canadian Framework on Clean Growth and Climate Change.

Meanwhile, the oil and gas industry is changing the way it develops Alberta's resources; the growth in multistage hydraulic fracturing activities and in situ oil sands development means more large-scale projects that bring with them new challenges, risks, and opportunities.

Albertans want to know what's happening and how it affects their lives, their families, their communities, the environment, and the industry. In response, we re-examined our approach to stakeholder engagement by making it a core area of regulatory practice. This includes forming committees in which indigenous peoples, environmental groups, municipalities, landowners, and others have a voice in developing regulatory requirements.

Not only is this sound practice, it also helps build trust and confidence in the regulator, without which we can't succeed.

Today, development occurs on a larger scale, with projects having a greater footprint on the landscape from multiple wells and associated infrastructure—roads, facilities, and pipelines—a departure from the days of single wells scattered across the landscape. The AER is looking closely at how multiple energy activities will affect specific areas, and at the cumulative effects those activities have over time.

One way we can do this is to look at the big picture by adopting a cumulative-effects-management approach. Cumulative effects are the total environmental changes caused by energy development activities in combination with other past, present, and future human actions. The impacts of each activity may

be insignificant by themselves, but when combined with other activities, the risk to the environment can be great.

Part of our response is to change the way operators submit those many applications, starting with a few pilot projects. Instead of many separate applications, operators will submit them as one—a single application, with one public notice—and will receive one single decision from the regulator, be it an approval or denial. Besides being more efficient for industry, it gives communities a better idea about what companies are proposing.

Meanwhile, people continue to be concerned about the pipelines that carry our oil and gas to markets across North America and beyond. They demand to see the facts and demand action to ensure that pipelines are safe. In Alberta, pipeline incident rates have fallen by almost 45 per cent in the last 10 years. While this is encouraging, the AER believes *all* pipeline incidents are preventable; reaching this goal requires a big effort.

To help achieve this, the AER is taking steps to make industry more accountable and to increase transparency by releasing data for Albertans to see. In February, we issued the Pipeline Performance Report, which details how individual companies and industry as a whole have been performing. The AER will issue similar reports on water use for in situ operations, mining, and oil and gas activities.

If Alberta is to meet people's changing expectations and stay current with changing technologies, and still compete in the global market, its regulator must also change by working with all Albertans to manage our energy resources today and beyond.

People continue to be concerned about the pipelines that carry our oil and gas to markets across North America and beyond. They demand to see the facts and demand action to ensure that pipelines are safe.

PIPELINE INCIDENT RATES

fallen almost 45%
in the last 10 years

2017–20 STRATEGIC PLAN

The AER is responsible for making sure the public and the environment are protected. We have a clear strategy to fulfil our mandate, reach our vision of regulatory excellence, and deliver results for Albertans, indigenous peoples, and our many stakeholders.

To develop our 2017–20 strategic plan, we examined the work we need to focus on based on our four pillars of protective, effective, efficient, and credible. The plan includes our strategic priorities, outcomes, and performance measures to ensure we stay on track and demonstrate our results.

Ensuring the responsible use of Alberta's water resources, reducing the inventory of aging infrastructure, lowering methane emissions, making certain that pipelines operate safely, and effectively engaging our stakeholders and all Albertans are just a few of the outcomes we'll work to achieve.

This is a continuation of the important work we do; each year we update our strategic plan to make sure we're adapting to the changes taking place around us—from new technology to evolving stakeholder expectations.

That said, we know we can take things further. That's why we're closely examining our strategy to see how it should evolve to better reach our overall outcomes as we ensure the safe, environmentally responsible development of Alberta's energy resources.

STRATEGIC PRIORITIES	STRATEGIC OUTCOMES
PROTECTIVE Develop an integrated whole-system regulatory approach	Effective management of public safety and cumulative environmental risks and impacts
EFFECTIVE Strengthen risk-based regulation	Effective management of resource conservation and minimize financial liability on Albertans
EFFICIENT Transform Alberta's energy regulatory system to improve efficiency	The regulatory system is efficient, minimizing duplication, with highly efficient processes, and only intervening to the level necessary
CREDIBLE Increase trust and confidence in how energy is developed in Alberta	Stakeholders are confident about how energy is developed in Alberta

FOCUSED OUTCOMES	PERFORMANCE MEASURES	PERFORMANCE TARGETS
Sustainable water use	Volume of all water used (by source) for hydraulic fracturing, enhanced oil recovery, in situ oil sands, and mineable oil sands	Public reporting of water use by industry
Reduce fluid tailings accumulation over mine life	Total annual volume of fluid tailings, treated fluid tailings, fines captured	Ensure industry complies with established performance standards
Climate change – reduce methane emissions	Volume of methane emissions	Support multistakeholder engagement process Ensure industry complies with established performance standards
Climate change – oil sands emissions	Volume of oil sands emissions	Establish a tracking and reporting system for oil sands emissions
Cumulative effects management	Cumulative effects are managed	Develop a framework to manage cumulative effects
Reduce aging inventory liability	Complete a risk assessment of energy-related infrastructure by March 2018	Address high-risk items as they are identified
Pipeline safety	Number of high-consequence pipeline incidents	2% reduction in high-consequence pipeline incidents from the previous two-year average
Regulatory efficiency	Stakeholder savings resulting from reduced regulatory burden that does not negatively impact the environment or public safety	$100 million in incremental savings to stakeholders in fiscal 2017/18
	Improve efficiency of AER application decisions	Single decision-making framework for wells, facilities, and pipelines available for use by external parties not later than 31 December 2018
Effective engagement of Albertans, Indigenous peoples, and stakeholders	Percentage of Albertans aware of the AER who express confidence in the organization's ability to fulfil its mandate	Maintain a confidence score above 80% annually
Achieve regulatory excellence	Level of skills and competencies	Close high-priority skill and capability gaps through the implementation of the Enterprise Learning Branch in 2017/18
	Employee engagement	Achieve 83% engagement in 2017/18
The AER is an integral partner in the Integrated Resource Management System (IRMS)	Percentage of IRMS strategic priorities supported by the AER	100% of IRMS strategic priorities supported by the AER

VISION

The AER is recognized for regulatory excellence, ensuring the safe, environmentally responsible development of energy resources for the benefit of all Albertans.

a new approach to our strategic plan

In 2013, the Alberta Energy Regulator was created to be protective, effective, efficient, and credible. We released a strategic plan that outlined how we'd focus our efforts, build relationships with stakeholders and Albertans, find new approaches to regulation, and reduce duplication, all while working to earn confidence and improve our accountability.

We've accomplished much since our launch, but just as the world of energy development evolves to face new challenges, our approach must also evolve. Low oil prices have resulted in job losses and industry consolidation, the world transitions to renewable forms of energy, new technologies are used to unlock unconventional resources. These are just some of the factors requiring new regulatory approaches.

At the same time, we know that Albertans expect and deserve to be better informed about and involved in the energy development process. We need to find new ways to include stakeholders, Indigenous communities, and Albertans in decisions, and we must continue to report on our work in an open and transparent way.

The AER strives to be excellent, and that means we must demonstrate how our work delivers outcomes that matter to Albertans—ensuring public safety and environmental protection and enforcing our requirements, all while ensuring economic benefits for our province.

Our model for regulatory excellence will help us become a regulator that demonstrates utmost integrity, stellar competence, and empathic engagement. Over the past four years we've used our strategic plan to build a strong foundation for a regulator that continues to improve and that seeks ground-breaking approaches to regulatory development, stakeholder engagement, and industry performance.

So now we're developing a new strategy for the AER, one that considers the challenges we face today and the ones that lie ahead. In the coming months, we'll reach out to stakeholders, Indigenous communities, and Albertans. We'll discuss our strategy and explain our plan to address big issues such as cumulative effects, managing large-scale projects with an integrated approach, improving industry performance, and addressing how we move aging oil and gas infrastructure into abandonment and reclamation more quickly.

Our new strategic plan will also include targets and measures that hold us accountable to Albertans, ensuring that our work is related to outcomes that matter and that we deliver on our commitments.

For four years we've based our strategic plan on our four pillars of being protective, effective, efficient, and credible. Now we're developing a new strategy for the AER, one that considers the challenges we face today and the ones that lie ahead.

OPERATIONAL
OVERVIEWS

OPERATIONS DIVISION

The Operations Division oversees the full life cycle of energy resource development in Alberta. It works with companies and stakeholders to assess new development proposals and holds companies accountable for meeting regulatory requirements—from design and construction through to active operations and ultimately decommissioning.

The division is made up of four branches:

- Three functional branches that focus on consistent and efficient use of the existing regulatory tools and processes to ensure compliance:
  - **Authorizations Branch** works with companies and stakeholders to make decisions about whether new development proposals should proceed,
  - **Environment & Operational Performance Branch** monitors projects during their production phase to ensure regulatory compliance,
  - **Closure & Liability Branch** holds companies accountable for meeting the regulatory requirements that apply to projects that are no longer operating.
- A fourth branch, **Industry Operations**, focuses on industry performance reporting and improving the effectiveness of our regulatory system across each of the sectors we regulate: oil and gas, pipelines, mining, and in situ.

STRATEGY & REGULATORY DIVISION

The Strategy and Regulatory Division identifies and manages issues, risks, and opportunities while steering the AER's regulatory development.

The division's staff

- use science and fact-based evaluation and forecasts to identify and manage issues, risks, and opportunities;
- manage the regulatory development process; and
- develop and implement the AER's enterprise, strategic, and corporate operations plans.

The Strategy and Regulatory Division comprises five branches, one team, and two groups that help to deliver expertise to the AER.

Major Projects and Transformation Branch oversees major AER projects, transformation initiatives, and cumulative effects management.

Regulatory Development and Economics Branch ensures we deliver consistent, predictable, and transparent regulatory change. This branch implements practical operating procedures for regulatory development and reports on energy statistics, including reporting on Alberta's current and future energy supply and demand to ensure optimal regulatory decision-making.

Reserves and Resources Branch monitors and reports on current and reliable indicators in energy resource, environmental, and social outcomes related to energy development at the reservoir to play-based scales.

The **Alberta Geological Survey** is a branch that provides the AER with scientific, peer-reviewed research, maps, and reports on Alberta's geology, earth resources, geological hazards, and groundwater at the regional scale.

Climate Policy Assurance Team is responsible for designing and delivering on the Government of Alberta's climate change policy direction by creating and implementing an effective and efficient regulatory framework.

Strategy Branch identifies emerging risks, issues and opportunities, and directs the development of organizational strategy.

Enterprise Planning Group leads the process of enterprise planning and prioritization using risk, portfolio and performance management to ensure that initiatives and projects support the achievement of the AER's outcomes. This group is the steward of the AER's Operational Excellence Management System.

The **Environmental Sciences Group** works to protect Alberta's environment by leading and providing strategic focus for the effective assessment and management of cumulative environmental risks and impacts from energy development across AER divisions. This group connects with environmental science experts both within and external to the AER including provincial, national, and international stakeholders.

STAKEHOLDER & GOVERNMENT ENGAGEMENT DIVISION

The Stakeholder and Government Engagement division supports all AER work though engagement, relationship building, information sharing, and collaborating with people and groups who are interested in or may be impacted by the AER's decisions. The division builds mutually beneficial relationships through five branches:

Alberta Government Engagement works with AER staff and our Government of Alberta partners to ensure that policy development and regulatory delivery for development of Alberta's energy resources are integrated and aligned, providing strategic advice and engagement expertise to all areas of the organization with respect to the Alberta government.

Alberta Stakeholder Engagement engages our Alberta stakeholders and indigenous peoples to understand their interests, values, and concerns regarding energy development in Alberta. The branch leads engagement planning for the AER and connects people to the organization by leading complex engagements, sharing information, and providing alternative dispute resolution services. In addition, the branch plays a key role in providing strategic advice, and support on indigenous relations procedures and plans with the Alberta government.

National and International Relations leads and facilitates organization-wide improvement that is informed by national and international perspectives. The AER is committed to demonstrating national and international leadership in regulating energy resources by learning from and sharing best practices and knowledge with our peers across Canada and around the globe.

Public Affairs is responsible for making sure that the AER's communications, both internal and external, are clear, timely and easy to understand. It provides many services to the organization, including media relations and crisis communications, strategic planning and advice, internal and corporate communications, editing, graphic design, digital media services, and web services.

The **Enterprise Learning Branch** provides the strategic oversight, learning standards and supports required by the AER to achieve learning excellence in the organization. The branch leads the assessment and development of priority learning needs, and provides transparency of learning resources for the benefit of the enterprise.

CORPORATE SERVICES DIVISION

The Corporate Services Division is committed to providing the foundational support necessary to enable the AER to achieve its mandate. This division focuses on people and culture, infrastructure, information,

and fiscal responsibility. It is designed to support the organization with key corporate functions such as technology, data and information management, facilities services, finance, administration, internal audit, and human resources.

Division branches include the following:

Administrative and Workplace Service interfaces with all 17 AER locations to provide corporate real estate, facilities management and office support services, procurement, fleet, corporate security, and business continuity management in support of the AER's business needs throughout the province.

Finance ensures that the AER maintains appropriate stewardship over its financial resources by providing accounting, planning, budgeting, and reporting services. Finance is also responsible for providing assistance in the development of appropriate internal control frameworks, leads financial stewardship towards a balanced budget, ensures the financial statements are complete, accurate and authorized. It also leads the administrative levy collection process and provides advice and expertise to the AER leaders.

People and Culture provides AER leaders and employees with the policies, processes, programs, and initiatives to support all aspects of people management and the employee experience within the organization. This includes workforce planning, talent acquisition, performance management, career and succession management, leadership and core competency development, employee engagement, and total rewards.

Information Management ensures the appropriate retention of all AER records and the management of all AER information and data assets while addressing risks, ensuring availability of and providing access to AER information and data to internal and external stakeholders.

Information Services provides AER with information technology and related services that enable the regulator to perform their mandate effectively and efficiently, while providing a governance model that protects the technology assets and users of the regulator.

Internal Audit conducts independent audit and advisory services to enhance effectiveness of AER controls and processes to meet organizational objectives. It also interfaces with the Office of the Auditor General of Alberta.

LAW BRANCH

The Law Branch provides high-quality legal and strategic advice to the entire organization, including the board of directors, hearing commissioners, and all divisions. The branch focuses on legal and strategic advice and is designed to support functions such as authorizations, contracts, hearings, litigation, regulatory and strategic projects, government and stakeholder engagement, and Alberta's *Freedom of Information and Protection of Privacy Act*.

Law Branch staff support the organization by providing essential knowledge, advice, and services related to their areas of expertise. The branch understands and has expertise in the business and strategic issues in which the AER is engaged. In addition, the Law Branch has expertise in the statutes the AER administers, including all regulations, rules, directives and policies. This includes the

- *Responsible Energy Development Act*,
- *Oil and Gas Conservation Act*,
- *Pipeline Act*,
- *Oil Sands Conservation Act*,
- *Coal Conservation Act*,
- *Water Act*,
- *Environmental Protection and Enhancement Act*,
- *Public Lands Act*, and
- Part 8 of the *Mines and Minerals Act*.

CORPORATE
GOVERNANCE

How an organization is governed determines how it carries out its daily business and how successful it is at achieving its goals. For this reason, corporate governance was a key consideration when the AER was created in June 2013.

The AER's governance structure separates the corporate, operational, and governance responsibilities from adjudicative functions (hearings on energy applications). Through this model, the AER seeks to realize its full potential as the single regulator of Alberta's energy resource development, as well as gain the confidence of its many stakeholders.

BOARD OF DIRECTORS

A chair heads the AER and leads a board of directors; none are involved in the AER's day-to-day operations or decisions. Rather, these directors set the general direction of the regulator's business affairs, including approval of the strategy and budget. The directors are also charged with approving regulatory change and setting performance expectations for the AER and its president and chief executive officer. In this way, the AER's board operates as a truly "corporate-style" board.

PRESIDENT AND CHIEF EXECUTIVE OFFICER

The president and chief executive officer, who reports directly to the chair, is accountable for day-to-day operations, which include receiving and making decisions on applications, monitoring and investigating energy resource activities for compliance, and overseeing reclamation and remediation of energy developments at the end of their life cycle.

HEARING COMMISSIONERS

Hearing commissioners are responsible for conducting all hearings into energy applications and regulatory appeals. Reporting to a chief hearing commissioner, they are independent adjudicators and operate free of political interference; their decisions may only be reviewed by the Court of Appeal of Alberta.

board of directors

During the seven meetings the AER's board of directors held throughout the 2016/17 fiscal year, the board approved changes to the 2017-20 strategic plan and approved the 2017/18 budget.

Additionally, the board approved several rule changes relating to regulatory instruments and administration and orphan levies while it monitored the AER's progress on delivering on the strategic plan's four key priorities.

The board strongly supported and endorsed both the Integrated Decision Approach and the International Centre of Regulatory Excellence over the last year. The board received briefings on the Regulatory Excellence Project, and provided comments on the project and the recommendations, as well as on AER action plans and development plans for the Enterprise Learning Branch.

The board's risk management committee endorsed the AER's senior leadership's identification and detailed analysis of 14 principal risks.

Two new pieces of legislation were also reviewed, along with potential implications for the AER, by the board: the new *Public Sector Compensation Transparency Act* and Bill 19: *Reform of Agencies, Boards and Commissions Compensation Act*. These acts may hinder the AER's ability to attract and retain the highly-skilled workforce needed to support the AER's mandate of protecting public safety, the environment, and maintaining economic benefits for all Albertans. With these concerns in mind, the board of directors will continue to monitor how these acts may affect the AER's ability to fulfil its mandate.

We welcomed Dr. Stan Boutin, Monica Norminton, and Jack Royal to the AER board of directors in 2016. These three people bring a breadth of strong environmental, legal, financial, and indigenous relations expertise and perspectives to the board.

And while we welcomed the new directors, we said goodbye to four long-standing directors: Dr. Peter Flynn, who chaired the audit and finance committee; Sheila O'Brien, who chaired the human resources, health and safety committee; Andy Neigel, former chair of the governance committee; and David Chalack, a member of the human resources, health and safety, and governance committees. All four of these former directors played critical roles in establishing strong governance practices and oversight for the AER and the board thanks them for their contributions and wishes them well in their future endeavours.

		Meetings attended
1	JACK ROYAL Governance Committee Chair	2 3
2	STAN BOUTIN	3 3
3	CASSIE DOYLE Governance Committee Chair Human Resources, Health and Safety Committee Chair Risk Management Committee Chair	7 7
4	GERRY PROTTI, M.A., ICD.D Chair Nomination Committee Chair	7 7
Not pictured	MONICA NORMINTON Audit and Finance Committee Chair	3 4

BY THE NUMBERS

7 meetings

6 committees

①
②
③
④

BOARD COMMITTEES

The AER's six board committees receive reports and recommendations from management, provide information, make recommendations to the board for approval, and make decisions on behalf of the board in their areas of authority. The following summarizes the business of each committee over the past year.

The **Audit and Finance Committee** reviewed the AER's management discussion and analysis (MD&A). In addition to reviewing quarterly statements, the annual financial results, and the budget, the committee met with Internal Audit Services at each of its meetings and monitored how AER management incorporated internal audit recommendations. The committee also met with the Auditor General of Alberta for the annual audit entrance and exit meetings.

The **Governance Committee** fully reviewed the terms of reference for all board committees and corporate bylaws to determine if revisions were required and made recommendations for the board's approval. The committee also managed the annual board evaluation process.

The **Human Resources, Health and Safety Committee** received quarterly workforce metrics reports that covered a number of the organization's talent programs, including health and safety, learning and development, employee wellness, and recruitment. In addition, the committee received special reports about pension plans, a new recognition program, the career and succession management program, and the competency framework.

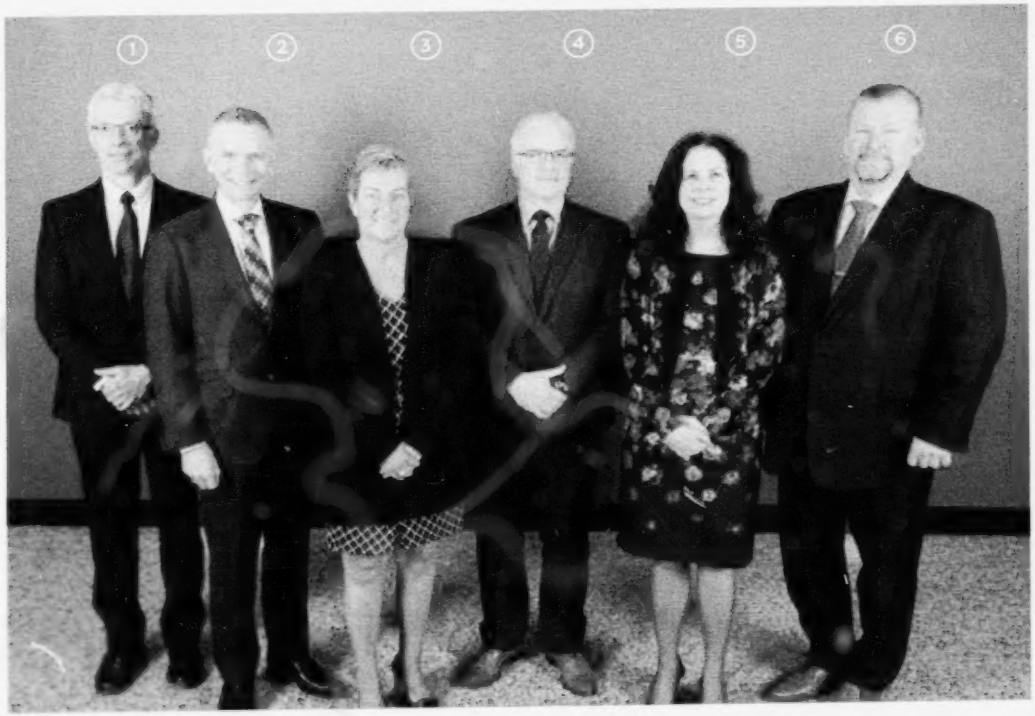
The **Nomination Committee** met several times and planned the recruitment of three new directors in 2016/17. This involved advertising the positions, conducting interviews, and making recommendations to both the Ministers of Energy and Environment and Parks. Three new directors were appointed in September 2016. This committee also met in the fall of 2016 and winter of 2017 to plan for the potential recruitment of two new directors in 2017.

The Regulatory Review Committee reviewed changes to, and informed the board about, a number of regulatory instruments, including the following:

- *Specified Enactment Direction 002: Application Submission*
- *Directive 085: Fluid Tailings Management for Oil Sands Mining Projects*
- *Directive 013: Suspension Requirements for Wells*

The committee took several rule amendments to the board for approval, including the annual orphan and administration levies, as well as amendments to the *Oil and Gas Conservation Rules* to implement *Directive 085*.

The **Risk Management Committee** continued to oversee development of the enterprise risk management program. In November, the AER enterprise risk manager provided the committee and the recently appointed directors with an overview of the AER risk management framework and specific risk exposures (mandate and organizational risks). In the fourth quarter, the committee approved a new and enhanced principal risk assessment process and its application to three principal risks (dam safety, tailings management, and odour management). The committee requested that the entire principal risk register be reassessed under the new process by end of September 2017, and that detailed treatment strategies be developed for all unacceptable risks. As of March 2017, 12 principal risks out of 14 were reviewed and accepted by the committee, following their approval by the AER executive leadership team.



executive leadership team

Chair of the Board

President & CEO

1. CAL HILL
   Executive Vice President
   Strategy & Regulatory
2. KIRK BAILEY
   Executive Vice President
   Operations
3. JENNIFER STEBER
   Executive Vice President
   Stakeholder & Government Engagement
4. JIM ELLIS
   President & Chief
   Executive Officer
5. PATRICIA JOHNSTON
   General Counsel,
   Executive Vice President Law
6. RICK BROWN
   Executive Vice President
   Corporate Services

The AER president and CEO reports directly to the chair of the AER board of directors and is accountable for day-to-day operations, which include receiving and making decisions on applications, monitoring and investigating energy resource activities for compliance, and closure of energy developments, including remediation and reclamation.

1 CINDY CHIASSON, LL.B
Full-time Hearing Commissioner

2 ALEX BOLTON, B.Sc., MMSc., P.Geo.
Chief Hearing Commissioner

3 LORNE TERNES, LL.B
Part-time Hearing Commissioner

4 CECILIA LOW, B.Sc., LL.B., LL.M.
Full-time Hearing Commissioner

5 TERRY ENGEN
Part-time Hearing Commissioner

6 BRIAN ZAITLIN, Ph.D., P.Geo., C.P.G.
Part-time Hearing Commissioner

7 ROB MCMANUS B.A., M.E.Des.
Full-time Hearing Commissioner

8 CHRISTINE MACKEN, B.A.
Full-time Hearing Commissioner

9 HEATHER KENNEDY, B.Sc.
Part-time Hearing Commissioner

10 JUDE DANIELS
Part-time Hearing Commissioner

11 BARBARA McNEIL, B.Sc., C.M.
Full-time Hearing Commissioner

hearing commissioners

Hearing commissioners are an important part of the AER's structure. Reporting to a chief hearing commissioner, the hearing commissioners are responsible for conducting public hearings and alternative dispute resolution (ADR) processes related to energy applications and regulatory appeals referred to them by the AER. Appointed by the Government of Alberta through an Order in Council, hearing commissioners are independent decision makers whose decisions are only subject to review by the Court of Appeal of Alberta.

Last year, the AER said farewell to full-time hearing commissioner Brad McManus and part-time hearing commissioners John Lawson and Jurgen Preugschas, and we acknowledge each for the valuable contributions they have made.

The AER welcomed three new hearing commissioners in July 2016: full-time hearing commissioner Cindy Chiasson and part-time commissioners Jude Daniels and Brian Zaitlin. As a lawyer, Ms. Chiasson brings experience in environmental and natural resource regulatory matters. Ms. Daniels has a background in regulatory, energy, and aboriginal law and is a member of the Métis Nation of Alberta. As an accomplished geologist, Dr. Zaitlin has spent many years in industry and academia.

Hearing commissioners have access to a range of adjudicative and mediation processes to resolve disputes. They strive to use the most appropriate process based on the nature of the issue in dispute, the efficient and effective use of resources, and the requirements of natural justice and procedural fairness. Processes available include mediation, settlement conferences, binding dispute resolution, and oral, written, and electronic hearings before a panel of hearing commissioners or a single decision maker.

12 files referred to the chief hearing commissioner

3 hearings held

4 files resolved without hearing

Since the AER was created in 2013, the mediation process is used more often and fewer hearings are held

Since the AER was created in 2013, the mediation process is used more often and fewer hearings are held.

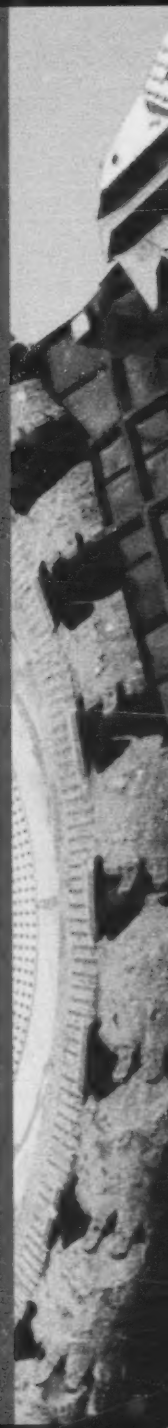
Last year, 12 files were referred to the chief hearing commissioner for hearings, including

- a joint provincial/federal review of a proposed oil sands mine,
- a proposed steam-assisted gravity drainage (SAGD) oil sands project,
- five regulatory appeals, and
- five proposed oil and gas applications.

Three hearings took place—two related to pipeline projects and one related to an oil and gas project—while four files that were scheduled for hearings were resolved through hearing commissioner facilitated ADR.

On two files, the parties reached agreement on their own, and two applications were withdrawn prior to a hearing. Currently, there are three hearing-commissioner-facilitated ADR processes underway and 10 pending files for hearings.

MANAGEMENT'S DISCUSSION & ANALYSIS



This management's discussion and analysis (MD&A) should be read in conjunction with the audited financial statements of the Alberta Energy Regulator (AER) for the years ended March 31, 2017 and 2016, and accompanying notes. The AER's financial statements and the financial data in this MD&A have been prepared in accordance with Canadian public sector accounting standards (PSAS).

All comparisons are between the years ended March 31, 2017 and 2016, unless otherwise noted. All amounts are expressed in thousands of Canadian dollars.

ABOUT THE AER

The AER is the single provincial regulator for oil, natural gas, oil sands, and coal development in Alberta, operating under the *Responsible Energy Development Act* (*REDA*). The AER ensures the safe, efficient, orderly, and environmentally responsible development of hydrocarbon resources over their entire life cycle. This includes allocating and conserving water resources, managing public lands, and protecting the environment while providing economic benefits for all Albertans.

All amounts are expressed in thousands of Canadian dollars.

SUMMARY ANNUAL HIGHLIGHTS

	2017 Actual	2016 Actual
Revenues		
Administration levy	$ 238 774	$ 240 168
Orphan well levy	30 448	30 167
Government transfer - provincial grant	3 338	—
Other revenue	6 194	8 145
	278 754	278 480
Expenses		
Energy regulation	245 959	249 113
Orphan well abandonment	31 028	31 111
Climate leadership plan	2 925	—
	279 912	280 224
Annual operating (deficit)	(1 158)	(1 744)
Capital		
Capital investment	12 109	14 196
Less: Amortization	(14 037)	(12 645)
Loss on disposal and write-down of tangible capital assets	(76)	(332)
Net capital investment	(2 004)	1 219
Surplus (deficit)	$ 846	$ (2 963)*

*Budget $(3 000)

All amounts are expressed in thousands of Canadian dollars.

The AER is an industry-funded regulator that is accountable to the Government of Alberta. The AER recovers its operating and capital asset costs through two separate revenue sources: an administration levy and other revenue. The AER received a provincial grant in 2017 for costs associated with the implementation of a component of the Climate Leadership Plan, which was initiated by the Government of Alberta. The AER collects an orphan well levy, which is paid directly to the Alberta Orphan Well Association (OWA); it is not used to recover the AER's costs.

In 2017, the AER continued to face fiscal challenges due to the effect of low commodity prices and a reduced budget.

The administration levy was $1 394, or 1 per cent less than the prior year. This decrease is largely due to the $1 690 reduction to the 2017 AER budget, which was offset by an increase in administration levy penalties. Other revenue also continued to decrease in 2017 as a result of the ongoing downturn in the oil and gas industry.

Energy regulation expenses were $3 154, or 1 per cent less than in the prior year. This decrease was mainly the result of budget cuts requested by the Government of Alberta, and effective cost-control efforts.

The AER received the provincial grant of $3 338 to implement a component of Alberta's Climate Leadership Plan, which is designed to take action on climate change and protect the province's health, environment, and economy. The Climate Leadership Plan includes a target to reduce methane emissions in Alberta by 45 per cent by 2025. As the single regulator for energy development in Alberta, the AER is working to develop and implement an efficient and effective regulatory framework that achieves the Government of Alberta's methane emissions reduction target.

In 2017, the AER demonstrated its commitment to fiscal responsibility and finished the year with $846 surplus. In 2016, the AER had a deficit of $2 963, which was a result of a one-time approval from Treasury Board and Finance to use $3 million of accumulated surplus to relocate one of the AER's field centres in order to address safety concerns for staff.

Capital investments were $2 087 less than the prior year. In 2016, the AER spent $1 933 more on leasehold improvements than in 2017, with most costs related to the relocation of two field offices.

All amounts are expressed in thousands of Canadian dollars.

TOTAL REVENUES

Administration Levy

REDA authorizes the AER to levy an administration fee on the sectors that it regulates. Funds from industry levies and assessments are used to support the AER's operations and fulfil the AER's mandate to ensure the safe, efficient, orderly, and environmentally responsible development of hydrocarbon resources over their entire life cycle.

The AER's revenue requirements directly affect operator levy invoices. Other factors also contribute to the fee determination at an operator level, including increases and decreases in wells or entities within the sector, ownership transfers and amalgamations, new entrants, and volume fluctuations. Invoices vary according to individual operations, are based on operating statistics for the previous calendar year, and are levied to operators based on the sector they operate within.

	2017	2016
Oil and gas	$ 173 080	$ 174 308
Oil sands	61 746	62 184
Coal	3 576	3 601
Penalties	372	75
Total administration levy	$ 238 774	$ 240 168

The administration levy for the year ending March 31, 2017, decreased by $1 394, or 1 per cent. This decrease is related to budget reductions directed by the Government of Alberta and is offset by an increase in administration levy penalties.

All amounts are expressed in thousands of Canadian dollars.

Orphan Well Levy

	2017	2016
Orphan well levy	$ 30 000	$ 30 000
Penalties	448	167
Total orphan well levy	$ 30 448	$ 30 167

Under Part 11 of the *Oil and Gas Conservation Act*, the AER is required to prescribe an orphan fund levy. This levy is based on the revenue requirements identified by the OWA and approved by the Government of Alberta. All levies collected are paid directly to the OWA and are not used to recover the AER's costs.

Government Transfer - Provincial Grant

	2017	2016
Government transfer - provincial grant	$ 3 338	$ —

In 2017, the AER received a provincial grant of $3 338 to implement the methane emissions reduction initiative within the Government of Alberta Climate Leadership Plan.

Other Revenue

	2017	2016
Other revenue	$ 6 194	$ 8 145

Other revenue consists of investment income, first-time well licence fees, data subscriptions, recoverable abandonment and enforcement revenue, and sales of electronic data and publications. In 2017, other revenue decreased by $1 951, or 24 per cent, due to the continued decline in oil and gas activity.

All amounts are expressed in thousands of Canadian dollars.

TOTAL EXPENDITURES

Total expenditures reflect the AER's use of its revenue to fund operating expenses and capital investment each fiscal year. Details of significant expenditures are included below.

i) Energy Regulation Expenses

	2017	2016
Salaries, wages, and employee benefits	$ 174 701	$ 180 705
Buildings	16 936	15 198
Computer services	16 742	15 719
Amortization of tangible capital assets	14 037	12 645
Consulting services	13 244	13 692
Other expenses*	10 299	11 154
Total energy regulation expenses	$ 245 959	$ 249 113

* Includes travel and transportation, administrative, equipment rent and maintenance, abandonment and enforcement costs, and loss on disposal and write-down of tangible capital assets.

Salaries, Wages, and Employee Benefits

Salaries, wages, and employee benefits account for about 71 per cent of energy regulation expenses. In 2017, salaries, wages, and employee benefits decreased by 3 per cent to $174 701 from $180 705 in 2016. This decrease is primarily due to staff turnover that resulted in a 3 per cent decrease in the number of full-time equivalent employees engaged in energy regulation. The AER had an average of 1 171 full-time employees in 2017 (1 207 in 2016).

All amounts are expressed in thousands of Canadian dollars.

Buildings
The AER leases several offices throughout the province. In 2017, building costs increased by $1 738, or 11 per cent. This increase is attributed to higher rental rates, increased operating costs, and a property tax exemption the AER received in 2016 and that related to 2015.

Computer Services
The AER's computer services costs relate to data and information management, computer maintenance, and server hosting. In 2017, computer services costs were $16 742, an increase of $1 023, or 7 per cent, from 2016. The increase in costs is due to new subscriptions and increased costs required to support additional software the AER purchased in 2016.

Consulting Services
The AER hires outside consultants to provide strategic and technical advice and certain operational services. In 2017, costs of consulting services were consistent with those incurred in 2016.

In 2017, the AER hired consultants to support work focused on regulatory excellence. This work included the following:

- Developing an integrated decision approach, which aims to create an integrated, risk-based approach to regulating hydrocarbon resources over their life cycle.
- Implementing the Priority Training Development project, which will develop and deliver targeted, high-calibre regulatory and technical training material for AER staff to close skill and training gaps in priority areas. This project will allow the AER to progress towards regulatory excellence and focus on the areas of dam safety, pipeline safety, and mines as three high priority areas.
- Creating the Enterprise Learning Branch, which will provide strategic oversight, learning standards, and support required by the AER to achieve learning excellence in the organization.
- Conducting a study into what substances are present during the "flowback" phase of hydraulic fracturing operations.
- Contracting the services of information technology consultants to help the AER optimize and support its information technology infrastructure.
- Carrying out other projects and initiatives that support the AER in delivering on its strategic plan to be a protective, effective, efficient, and credible regulator.

All amounts are expressed in thousands of Canadian dollars.

Amortization of Tangible Capital Assets

Capital assets are amortized over their estimated useful lives in accordance with PSAS. The cost of amortizing tangible capital assets increased by $1 392, or 11 per cent, from the previous year. This increase is attributed to additions made to capital assets at the end of 2016.

ii) Orphan Well Abandonment Expenses

	2017	2016
Orphan well abandonment	$ 31 028	$ 31 111

Orphan well abandonment expenses remained relatively consistent, as there was no change in OWA approved funding.

iii) Climate Leadership Plan Expenses

	2017	2016
Climate leadership plan	$ 2 925	$ –

The AER is responsible for implementing a component of the Climate Leadership Plan. Climate Leadership Plan expenses consist of the cost of staff and consultants involved in setting up a system for measuring methane emissions and for updating regulations to include new methane reduction standards.

iv) Capital Investment

	2017	2016
Capital investment	$ 12 109	$ 14 196

Developing and acquiring tangible capital assets, most significantly investment in information technology, plays a critical role in helping the AER protect Albertans and is making the regulator's processes more efficient and effective.

All amounts are expressed in thousands of Canadian dollars.

In 2017, the AER made capital investments of $12 109 compared to $14 196 in 2016. Capital investments in 2017 focused on the AER's commitment to regulatory excellence and included the following:

- Implementing a new reclamation certification mapping tool, which is an online system for receiving, processing, and tracking reclamation certificate applications. The new tool is designed to make the AER's application process more efficient and to ensure that all criteria for reclamation are thoroughly assessed in a timely manner.
- Developing the technology to support an integrated applications approach for pipeline projects. The technology is similar to that used in the reclamation certification application project, and it allows operators to apply for multiple authorizations under a single application.
- Developing a tool for providing information on water use versus water levels in the Fox Creek area. This information will help the AER improve transparency and public engagement while addressing stakeholder concerns about the impact of operator activity around Fox Creek.
- Conducting other projects to maintain security, reliability, integrity, and efficiency of the AER's information technology infrastructure and systems.

In 2016, the investment in tangible capital assets of $14 196 was focused primarily on upgrades to the AER's applications and databases and on the development of new systems required to support current operations and to meet ongoing changes in the regulatory environment. In 2016, the AER also spent $1 933 more on leasehold improvements with most costs related to the relocation of two field offices.

LIQUIDITY AND FINANCIAL POSITION

Liquidity

	2017	2016
Cash and cash equivalents, beginning of year	$ 24 851	$ 54 040
Operating transactions	20 233	(14 993)
Capital transactions	(12 109)	(14 196)
Financing transactions	—	—
Cash and cash equivalents, end of year	$ 32 975	$ 24 851

All amounts are expressed in thousands of Canadian dollars.

The AER collects funding at the beginning of the year to meet its operational requirements during that year. An available bank credit facility provides financial flexibility if funding is not collected on time. The AER anticipates that future liquidity will be adequate to fund its ongoing operations.

As at March 31, 2017, the AER had access to an unsecured $50 000 revolving line of credit with a Canadian chartered bank that can be used for general corporate purposes and that excludes the funding of operating deficits and capital expenditures. Any drawdowns on the line of credit bear interest at the bank's prime rate less 0.5 per cent per annum. As at March 31, 2017, the AER had $nil (March 31, 2016: $nil) draws against this line of credit.

In 2017, operating transactions provided cash of $20 233, while in 2016 they used cash of $14 993. The net increase in cash inflow from operating transactions was primarily due to favourable variances in accounts receivable, accounts payable, and accrued liabilities.

Cash used in capital transactions for the year ended March 31, 2017, was $12 109, compared to $14 196 in 2016. Capital transactions reflect additions to the AER's tangible capital assets. Details of the additions to tangible capital assets are described in the capital investment section of this MD&A.

The AER ended 2017 with $32 975 in cash and cash equivalents compared to $24 851 at the end of 2016.

Accounts Receivable

Accounts receivable were $7 982 as at March 31, 2017, compared to $18 149 on March 31, 2016, a decrease of $10 167. The decrease is due to the timing of issuing the orphan well levy in 2017. In 2017, the levy was issued earlier than in 2016.

Accounts Payable and Accrued Liabilities

Accounts payable and accrued liabilities were $17 302 as at March 31, 2017, and were consistent with those outstanding as at March 31, 2016.

All amounts are expressed in thousands of Canadian dollars.

SECURITY DEPOSITS

	2017 Cash	2016 Cash	2017 Letters of Credit	2016 Letters of Credit
Licensee Liability Rating Program	$ 114 146	$ 107 695	$ 232 255	$ 183 162
Mine Financial Security Program	40 993	24 230	1 345 974	1 340 513
Other programs	7 162	6 200	5 408	4 664
Total security deposits	**$ 162 301**	$ 138 125	**$ 1 583 637**	$ 1 528 339

The AER collects financial security under a number of different programs to protect the public from paying costs associated with abandoning and decommissioning energy development sites.

- The Licensee Liability Rating (LLR) Program is designed to minimize the risk to the orphan fund posed by the unfunded liability of licensees in the program.

  The program is based on a comparison of the ratio of assets (which are based on production) to liabilities (abandonment and reclamation costs).

  As at March 31, 2017, the AER held $114 146 in cash under the LLR Program. This is $6 451, or 6 per cent, higher than on March 31, 2016. The total amount of letters of credit held under the LLR Program as at March 31, 2017, was $232 255, which is $49 093, or 27 per cent, higher than in 2016. The increase in cash and letters of credit held under the LLR Program was caused by a decline in production due to low oil and gas prices. This reduced asset values and decreased the asset-to-liability ratios for licensees.

All amounts are expressed in thousands of Canadian dollars.

- The Mine Financial Security Program (MFSP) was developed to manage liabilities associated with coal and oil sands mining operations. The program requires for each project a base amount of security, which would provide the funds necessary to place the site in a safe and secure state and maintain care and custody should the approval holder fail to meet its obligations. Approval holders have an option to provide full financial security at any time in the life of the project based on the MFSP liability calculation. Approval holders are responsible for the suspension, abandonment, remediation, and reclamation of lands disturbed by resource development. As mines are depleted, security amounts increase. Additional security must also be posted when a mine owner does not meet certain financial tests. Annually, approval holders report to the AER on the status of reclamation and land disturbances and adjust their MFSP security deposits accordingly.

  As at March 31, 2017, the AER held $40 993 in cash under the MFSP program. This is $16 763, or 69 per cent, higher than on March 31, 2016. The total amount of letters of credit held under the MFSP as at March 31, 2017, was $1 345 974, which is $5 461 higher than the amount of letters of credit held as at March 31, 2016. In 2017, additional security was placed with the AER as a result of land disturbances caused by coal mining operations.

ACTUAL RESULTS COMPARED WITH THE ADJUSTED BUDGET

All amounts are expressed in thousands of Canadian dollars.

	2017 Adjusted Budget	2017 Actual
Revenues		
Administration levy	$ 238 403	$ 238 774
Orphan well levy	30 000	30 448
Government transfer - provincial grant	3 624	3 338
Other revenue	5 013	6 194
	277 040	278 754
Expenses		
Energy regulation	245 416	245 959
Orphan well abandonment	30 500	31 028
Climate leadership plan	3 624	2 925
	279 540	279 912
Annual operating (deficit)	(2 500)	(1 158)
Capital		
Capital investment	9 000	12 109
Less: Amortization	(11 500)	(14 037)
Loss on disposal and write-down of tangible capital assets	—	(76)
Net capital investment	(2 500)	(2 004)
	$ —	$ 846

All amounts are expressed in thousands of Canadian dollars.

The AER prepares an annual budget that is approved by the Government of Alberta. The adjusted budget, also approved by the Government of Alberta, includes $3 624 in both revenue and expenses related to the methane reduction component of the Climate Leadership Plan.

The AER's total revenues were $1 714, or 1 per cent, higher than budget. The increase in revenues was the result of an increase in administrative penalties and enforcement revenue. The AER's total expenses were consistent with the budget. The AER's net capital investments exceeded the budget by $496, or 20 per cent. This variance is due to the acceleration of various capital expenditures, including those required to implement the methane emissions reduction initiative within the Climate Leadership Plan.

RISK MANAGEMENT

A key role of AER leadership is to ensure that the wide variety of risks the AER is exposed to is managed effectively. Due to the nature of its regulatory mandate, the AER faces two very distinct families of risks:

- **Organizational risks**. The AER faces risks that may threaten its operational capabilities or compromise its ability to fulfil its mandate. Examples include cyber attacks, external litigation, funding shortfalls, etc. The AER owns these risks and develops appropriate internal controls to drive them down to an acceptable level.
- **Mandate risks**. These risks are associated with industry activities in the four sectors that the AER regulates (mining, in situ, oil and gas, and pipelines). They may adversely affect the environment, the health and safety and social well-being of Albertans, or the economy of the province. Examples include pipeline spills, oil and gas well leaks, release of contaminants, emission of offensive odours, and cumulative and environmental effects. Industry owns these risks and develops its controls to reduce them. However, it is the AER's mandate to develop and implement regulatory instruments (e.g., directives and acts) and associated controls (e.g., authorization processes for new energy projects, surveillance and enforcement of regulatory requirements on operating facilities, closure and reclamation processes for facilities reaching the end of their life) within the mandate to drive risks down to levels acceptable to society while allowing responsible energy development.

To this end, the AER has developed an enterprise risk management framework that supports the organization in identifying, assessing, and managing risks. This framework includes the following:

- A **risk management policy** stating the AER's mandate of risk management as well as its commitment to
  - taking a risk-informed approach to decision making, regulatory development, regulatory delivery, and organizational management; and
  - using a single-risk management framework that aligns with the ISO 31000-compliant Government of Alberta Common Risk Management Framework (CRMF).

All amounts are expressed in thousands of Canadian dollars.

- A unique set of **risk management criteria** that aligns with the CRMF to address the impacts, likelihood, and tolerance levels for both organizational and mandate risks.
- A **risk management process**, compliant with ISO 31000, but that allows flexibility in risk assessment approaches to address the broad variety of the AER's risk exposures and decision-making needs.

The AER implements the risk management process at different levels across the organization to support decisions and help prioritize resources in high-risk areas:

- Mandate risks are continually assessed across all four sectors (mining, in situ, oil and gas, pipelines) and throughout the life cycle of energy assets (design and construction, operation, closure, and abandonment). Regulatory activities are then prioritized to focus on high-risk areas in order to
  - improve the effectiveness of the AER's current regulatory controls to better address root causes of failure and increase regulatory oversight when and where appropriate; and
  - to develop new regulatory instruments or update existing ones to keep pace with industry developments and associated changes in risk levels.
- Organizational risks are assessed on an annual basis to identify key risk treatment strategies, which are then incorporated into the strategic plan for the subsequent fiscal year.
- Mandate and organizational risks are filtered and rolled up through a principal risk program that addresses the AER's key risk exposures. Principal risks are reported to the AER's leadership team and the board of directors' Risk Management Committee for their information, oversight, and strategic guidance. This risk governance process ensures that key risks to the AER's mandate and operations are being diligently managed at the highest level of the organization.

Other functions complement the AER's enterprise risk management program to further ensure that residual risks are reduced to acceptable limits:

- The Audit and Finance Committee oversees the system of internal financial controls, the external audit process, and the AER's process for ensuring compliance with applicable laws and regulations.
- AER management is responsible for establishing and maintaining adequate internal controls over financial reporting. These controls are designed to provide reasonable assurance about the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with PSAS.
- The AER's internal audit function provides the AER with an objective and independent assessment of internal controls and identifies opportunities to improve operational and financial reporting. The AER's internal audit department reports directly to the Audit and Finance Committee of the board of directors and discusses matters with the Audit and Finance Committee independent of management.

All amounts are expressed in thousands of Canadian dollars.

FUTURE OUTLOOK

2018 Budget Compared to 2017 Adjusted Budget

	2018 Budget	2017 Adjusted Budget
Revenues		
Administration levy	$ 244 847	$ 238 403
Orphan well levy	30 000	30 000
Government transfer - provincial grant	—	3 624
Other revenue	4 409	5 013
	279 256	277 040
Expenses		
Energy regulation	244 619	245 416
Orphan well abandonment	30 500	30 500
Climate leadership plan	6 637	3 624
	281 756	279 540
Annual operating (deficit)	(2 500)	(2 500)
Capital		
Capital investment	9 000	9 000
Less: Amortization	(11 500)	(11 500)
Net capital investment	(2 500)	(2 500)
	$ —	$ —

All amounts are expressed in thousands of Canadian dollars.

Over the next year, the AER will continue laying the groundwork to support a 45 per cent reduction in methane emissions from the oil and gas industry by 2025. The AER's 2018 budget reflects changes in the AER's revenue and expenditure requirements necessary to implement this initiative. In 2018, the AER's administration levy will increase by $6 637, which is $3 013 higher than what was required for the program in 2017. In 2017, $3 624 required for the implementation of the methane reduction policy was funded by the Government of Alberta.

Forward-Looking Statements

This MD&A contains forward-looking statements that are subject to certain assumptions and risks that create uncertainties. These assumptions and risks could cause actual results to differ materially from results anticipated by the forward-looking statements.

Additional Information

Additional information relating to the AER can be found on the AER's website at www.aer.ca.

ALBERTA ENERGY REGULATOR FINANCIAL STATEMENTS

FOR THE YEAR ENDED MARCH 31, 2017

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MANAGEMENT'S RESPONSIBILITY FOR FINANCIAL REPORTING

The accompanying financial statements of the Alberta Energy Regulator (AER) and all other information relating to the AER contained in this annual report have been prepared and presented by management, who is responsible for the integrity and fair presentation of the information.

These financial statements are prepared in accordance with Canadian Public Sector accounting standards. The financial statements necessarily include some amounts that are based on informed judgments and best estimates of management. The financial information contained elsewhere in this annual report is consistent with that in the financial statements.

Management is responsible for maintaining an effective system of internal controls designed to provide reasonable assurance that financial information is reliable, transactions are properly authorized, assets are safeguarded, and liabilities are recognized.

The Auditor General of Alberta, the AER's external auditor appointed under the *Auditor General Act*, performed an independent external audit of these financial statements in accordance with Canadian generally accepted auditing standards, and has expressed his opinion in the accompanying Independent Auditor's Report.

The board of directors is responsible for ensuring that management fulfills its responsibilities for financial reporting and internal controls. The board of directors exercises this responsibility through the Audit and Finance Committee, composed of directors who are not employees of the regulator. The Audit and Finance Committee meets with the internal auditors and the external auditors, both in the presence and in the absence of management to discuss their audit, including any findings as to the integrity of financial reporting processes and the adequacy of our systems of internal controls. The internal and external auditors have full and unrestricted access to the Audit and Finance Committee.

[Original signed by Jim Ellis]
President and Chief Executive Officer

[Original signed by Rick Brown]
Executive Vice President, Corporate Services

[Original signed by Tom Heywood]
Vice President, Finance and Chief Financial Officer

May 11, 2017

INDEPENDENT AUDITOR'S REPORT TO THE BOARD OF DIRECTORS OF THE ALBERTA ENERGY REGULATOR

AUDITOR GENERAL Alberta

REPORT ON THE FINANCIAL STATEMENTS

I have audited the accompanying financial statements of the Alberta Energy Regulator, which comprise the statement of financial position as at March 31, 2017, and the statements of operations, change in net debt and cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information.

MANAGEMENT'S RESPONSIBILITY FOR THE FINANCIAL STATEMENTS

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian public sector accounting standards, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

AUDITOR'S RESPONSIBILITY

My responsibility is to express an opinion on these financial statements based on my audit. I conducted my audit in accordance with Canadian generally accepted auditing standards. Those standards require that I comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

OPINION

In my opinion, the financial statements present fairly, in all material respects, the financial position of the Alberta Energy Regulator as at March 31, 2017, and the results of its operations, its remeasurement gains and losses, its changes in net debt, and its cash flows for the year then ended in accordance with Canadian public sector accounting standards.

[Original signed by Merwan N. Saher FCPA, FCA]

Auditor General
May 11, 2017
Edmonton, Alberta

ALBERTA ENERGY REGULATOR
STATEMENT OF OPERATIONS
Year Ended March 31
(in thousands)

	2017		2016
	Budget (Note 3, Schedule 3)	Actual	Actual
Revenues			
Industry levies and assessments	$ 268,403	$ 269,222	$ 270,335
Information, services and fees	4,146	5,132	6,867
Government transfer - provincial grant	-	3,338	-
Investment	867	1,062	1,278
	273,416	278,754	278,480
Expenses (Schedule 1)			
Energy regulation	245,416	245,959	249,113
Orphan well abandonment (Note 4)	30,500	31,028	31,111
Climate leadership plan	-	2,925	-
	275,916	279,912	280,224
Annual operating (deficit)	(2,500)	(1,158)	(1,744)
Accumulated surplus at beginning of year	62,111	62,111	63,855
Accumulated surplus at end of year	$ 59,611	$ 60,953	$ 62,111

The accompanying notes and schedules are part of these financial statements.

ALBERTA ENERGY REGULATOR
STATEMENT OF FINANCIAL POSITION
As at March 31
(in thousands)

	2017	2016 Restated - Note 2 (h)
Financial assets		
Cash and cash equivalents (Note 5)	$ 32,975	$ 24,851
Accounts receivable (Note 6)	7,982	18,149
Pension assets (Note 12)	510	-
	41,467	43,000
Liabilities		
Accounts payable and accrued liabilities	17,302	16,643
Grant payable to Orphan Well Association	14,115	15,093
Unearned revenue (Note 9)	1,997	1,604
Deferred lease incentives (Note 10)	20,648	22,264
Pension obligations (Note 12)	-	692
	54,062	56,296
Net debt	(12,595)	(13,296)
Non-financial assets		
Tangible capital assets (Note 13)	62,426	64,430
Prepaid expenses and other assets	11,122	10,977
	73,548	75,407
Accumulated surplus (Note 14)	$ 60,953	$ 62,111

Contractual obligations (Note 16)

The accompanying notes and schedules are part of these financial statements.

ALBERTA ENERGY REGULATOR
STATEMENT OF CHANGE IN NET DEBT
Year Ended March 31
(in thousands)

	2017		2016
	Budget (Note 3)	Actual	Actual
Annual operating (deficit)	$ (2,500)	$ (1,158)	$ (1,744)
Acquisition of tangible capital assets (Note 13)	(9,000)	(12,109)	(14,196)
Amortization of tangible capital assets (Note 13)	11,500	14,037	12,645
Loss on disposal and write-down of tangible capital assets		76	332
Increase in prepaid expenses and other assets		(145)	(624)
Decrease (increase) in net debt	-	701	(3,587)
Net debt at beginning of year	(13,296)	(13,296)	(9,709)
Net debt at end of year	$ (13,296)	$ (12,595)	$ (13,296)

The accompanying notes and schedules are part of these financial statements.

ALBERTA ENERGY REGULATOR
STATEMENT OF CASH FLOWS
Year Ended March 31
(in thousands)

	2017	2016
Operating transactions		
Annual operating (deficit)	$ (1,158)	$ (1,744)
Non-cash items included in net operating results		
Amortization of tangible capital assets (Note 13)	14,037	12,645
Loss on disposal and write-down of tangible capital assets	76	332
Change in pension obligations	(1,202)	(1,657)
Amortization of deferred lease incentives (Note 10)	(1,616)	(1,522)
	10,137	8,054
Decrease (increase) in accounts receivable	10,167	(5,904)
(Increase) in prepaid expenses and other assets	(145)	(624)
Increase (decrease) in accounts payable and accrued liabilities	659	(16,868)
(Decrease) increase in grant payable to Orphan Well Association	(978)	38
Increase (decrease) in unearned revenue	393	(452)
Additions to deferred lease incentives (Note 10)	-	763
Cash provided by (applied to) operating transactions	20,233	(14,993)
Capital transactions		
Acquisition of tangible capital assets (Note 13)	(12,109)	(14,196)
Cash applied to capital transactions	(12,109)	(14,196)
Financing transactions		
Proceeds from line of credit	16,138	-
Debt repayment	(16,138)	-
Cash applied to financing transactions	-	-
Increase (decrease) in cash and cash equivalents	8,124	(29,189)
Cash and cash equivalents at beginning of year	24,851	54,040
Cash and cash equivalents at end of year	$ 32,975	$ 24,851

The accompanying notes and schedules are part of these financial statements.

ALBERTA ENERGY REGULATOR
NOTES TO THE FINANCIAL STATEMENTS
March 31, 2017
(in thousands)

Note 1 Authority and purpose

The Alberta Energy Regulator (AER) is an independent and quasi-judicial organization of the Government of Alberta. The AER operates under the *Responsible Energy Development Act*. The AER's mandate provides for the safe, efficient, orderly, and environmentally responsible development of hydrocarbon resources over their entire life cycle. This includes allocating and conserving water resources, managing public lands, and protecting the environment while providing economic benefits for all Albertans.

Note 2 Summary of significant accounting policies and reporting practices

These financial statements are prepared in accordance with Canadian Public Sector Accounting Standards (PSAS).

(a) Revenues

All revenues are reported on the accrual basis of accounting. Cash received for which services have not been provided by year end is recognized as unearned revenue.

Government transfers

Transfers from the Government of Alberta, without stipulations for the use of the transfer, are recognized as revenue when the transfer is authorized and the AER is eligible to receive the funds.

(b) Expenses

Expenses are reported on an accrual basis. The cost of all goods consumed and services received during the year is expensed.

(c) Valuation of financial assets and liabilities

The AER's financial assets and liabilities are generally measured as follows:

Financial Statement Component	Measurement
Cash and cash equivalents	Cost
Accounts receivable	Lower of cost or net recoverable value
Accounts payable and accrued liabilities	Cost
Grant payable to the Orphan Well Association	Cost

The AER has not designated any financial assets or liabilities in the fair value category, has no significant foreign currency transactions and does not hold any derivative contracts. The AER has no significant remeasurement gains or losses and consequently has not presented a statement of remeasurement gains and losses.

ALBERTA ENERGY REGULATOR
NOTES TO THE FINANCIAL STATEMENTS
March 31, 2017
(in thousands)

Note 2 Summary of significant accounting policies and reporting practices (continued)

(d) Financial assets

Financial assets are AER's financial claims on external organizations and individuals at the year end.

Cash and cash equivalents

Cash is comprised of cash on hand and demand deposits.

Accounts receivable

Accounts receivable are recognized at the lower of cost or net recoverable value. A valuation allowance is recognized when recovery is uncertain.

Pension

Accrued benefit obligations are actuarially determined using the projected benefit method prorated on length of service and management's best estimate of expected plan investment performance, projected employees' compensation levels and retirement age of employees.

Accrued benefit obligations and pension benefit cost for the year are calculated using the expected rate of return on plan assets as its discount rate. The expected return on plan assets is determined using market values of plan assets.

Actuarial gains and losses are amortized over the average remaining service period of the active employees, which is 10.5 years.

Past service cost arising from plan amendments is accounted for in the period of the plan amendments.

Defined contribution plan accounting is applied to the Government of Alberta multi-employer defined benefit pension plans as the AER has insufficient information to apply defined benefit plan accounting. Accordingly, pension expense is comprised of employer contributions to the plans that are required for its employees during the year, which are calculated based on actuarially pre-determined amounts that are expected to provide the plans' future benefits.

(e) Liabilities

Liabilities represent present obligations of the AER to external organizations and individuals arising from transactions or events occurring before the year end. They are recognized when there is an appropriate basis of measurement and management can reasonably estimate the amount.

Liabilities include all financial claims payable by the AER at fiscal year end.

ALBERTA ENERGY REGULATOR
NOTES TO THE FINANCIAL STATEMENTS
March 31, 2017
(in thousands)

Note 2 Summary of significant accounting policies and reporting practices (continued)

(e) Liabilities (continued)

Deferred lease incentives

Deferred lease incentives, consisting of leasehold improvement costs, reduced rent benefits and rent-free periods, are amortized on a straight-line basis over the term of the lease.

Liability for contaminated sites

Contaminated sites are a result of contamination of a chemical, organic or radioactive material or live organism that exceeds an environmental standard, being introduced into soil, water or sediment. The liability is recognized net of any expected recoveries. A liability for remediation of contaminated sites normally results from an operation that is no longer in productive use and is recognized when all of the following criteria are met:

- an environmental standard exists;
- contamination exceeds the environmental standard;
- the AER is directly responsible or accepts responsibility;
- it is expected that future economic benefits will be given up; and
- a reasonable estimate of the amount can be made.

(f) Non-financial assets

Non-financial assets are acquired, constructed or developed assets that do not normally provide resources to discharge existing liabilities, but instead:

- are normally employed to deliver AER services;
- may be consumed in the normal course of operations; and
- are not for sale in the normal course of operations.

Non-financial assets of the AER are limited to tangible capital assets and prepaid expenses and other assets.

Tangible capital assets

Tangible capital assets are recognized at cost, which includes amounts that are directly related to the acquisition, design, construction, development, improvement or betterment of the assets and are amortized over their estimated useful lives using the following methods:

ALBERTA ENERGY REGULATOR
NOTES TO THE FINANCIAL STATEMENTS
March 31, 2017
(in thousands)

Note 2 Summary of significant accounting policies and reporting practices (continued)

(f) Non-financial assets (continued)

Tangible capital assets (continued)

Leasehold improvements	Straight line	Term of the lease
Furniture and equipment	Straight line	5 - 12 years
Computer hardware	Straight line	4 years
Computer software - purchased	Straight line	4 years
Computer software - developed	Declining balance	5 years

Amortization is only charged if the tangible capital asset is put into service.

Work-in-progress, which includes developed computer software and leasehold improvements, is not amortized until a project is complete and the asset is put into service.

Tangible capital assets are written down when conditions indicate that they no longer contribute to the AER's ability to provide goods and services, or when the value of future economic benefits associated with the tangible capital assets is less than their net book value. The net write-downs are accounted for as expense in the Statement of Operations.

Prepaid expense

Prepaid expense is recognized at cost and amortized based on the terms of the agreements.

(g) Measurement uncertainty

Measurement uncertainty exists when there is a variance between the recognized or disclosed amount and another reasonably possible amount. The amounts recognized for amortization of tangible capital assets are based on estimates of the useful life of the related assets. Accrued defined benefit obligations are subject to measurement uncertainty due to the use of actuarial assumptions. The resulting estimates are within reasonable limits of materiality and are in accordance with the AER's significant accounting policies.

(h) Change in accounting policy

Security deposits

During the year, the AER changed its accounting policy with respect to the disclosure of security deposits in the AER Financial Statements. The AER now discloses security held in the form of cash in the notes to the financial statements only. In prior years, the AER included these security deposits on the Statement of Financial Position as financial assets and liabilities, explaining in the notes that these deposits are held on behalf of licensees. This change aligns the accounting treatment of security deposits with other entities within the Government of Alberta.

ALBERTA ENERGY REGULATOR
NOTES TO THE FINANCIAL STATEMENTS
March 31, 2017
(in thousands)

Note 2 Summary of significant accounting policies and reporting practices (continued)

(h) Change in accounting policy (continued)

Security deposits (continued)

This change in accounting policy has been applied retroactively with restatement of the prior period's Statement of Financial Position. The effect of adopting this change decreases AER's financial assets and liabilities on the March 31, 2016 Statement of Financial Position in the amount of security deposits of $138,125.

(i) Future accounting changes

The Public Sector Accounting Board has issued the following accounting standards:

PS 2200 Related Party Disclosure and PS 3420 Inter-entity Transactions (effective April 1, 2017)

PS 2200 defines a related party and establishes disclosures required for related party transactions; PS 3420 establishes standards on how to account for and report transactions between public sector entities that comprise a government's reporting entity from both a provider and recipient perspective.

PS 3210 Assets, PS 3320 Contingent Assets and PS 3380 Contractual Rights (effective April 1, 2017)

PS 3210 provides guidance for applying the definition of assets set out in Financial Statement Concepts, PS 1000, and establishes disclosure standards for assets; PS 3320 defines and establishes disclosure standards on contingent assets; PS 3380 defines and establishes disclosure standards on contractual rights.

PS 3430 Restructuring Transactions (effective April 1, 2018)

This standard provides guidance on how to account for and report restructuring transactions by both transferors and recipients of assets and/or liabilities, together with related programs or operating responsibilities.

Management is currently assessing the impact of these standards on the financial statements.

Note 3 Budget

The Budget is based on the AER Business Plan for the year ended March 31, 2017. The Budget and budget adjustments have been approved by the Government of Alberta.

Note 4 Orphan well abandonment

The AER has delegated the authority to manage the abandonment and reclamation of wells, facilities and pipelines that are licensed to defunct licensees to the Alberta Oil and Gas Orphan Abandonment and Reclamation Association (Orphan Well Association). The AER grants all of its orphan well abandonment revenues (levy and application fees) to the Orphan Well Association. During the year ended March 31, 2017, the AER collected $30,448 (2016 - $30,167) in levies and $580 (2016 - $944) in application fees.

ALBERTA ENERGY REGULATOR
NOTES TO THE FINANCIAL STATEMENTS
March 31, 2017
(in thousands)

Note 5 Cash and cash equivalents

Cash and cash equivalents are held in an account with a Canadian chartered bank and earn interest calculated based on the average monthly cash balance. The funds are available to be withdrawn upon request. During the year ended March 31, 2017, the AER earned interest at the rate of 1.0% (2016 - 1.1%).

Note 6 Accounts Receivable

	2017			2016
	Gross amount	Allowance for doubtful accounts	Net realizable value	Net realizable value
Accounts receivable	$ 10,028	$ (2,046)	$ 7,982	$ 18,149

Note 7 Financial instruments

The AER has the following financial instruments: accounts receivable, accounts payable and accrued liabilities and grant payable to the Orphan Well Association.

The AER has exposure to the following risks from its use of financial instruments:

(a) Liquidity risk

Liquidity risk is the risk that the AER will encounter difficulty in meeting obligations associated with financial liabilities. The AER does not consider this to be a significant risk as the AER collects funding at the beginning of the year to meet all obligations that arise during the year. In addition, the available credit facility provides financial flexibility to allow the AER to meet its obligations if funding cannot be collected on a timely basis.

(b) Credit risk

The AER is exposed to credit risk from potential non-payment of accounts receivable. Accounts receivable include balances due from operators in the oil and gas industry and are subject to normal industry credit risk. The AER regularly monitors the financial status of operators and assesses the collectability of accounts receivable. The AER's maximum exposure to credit risk is limited to the carrying amount of accounts receivable at the reporting date and presented in the Statement of Financial Position. The AER established a valuation allowance that corresponds to the specific credit risk of operators, historical trends and economic circumstances.

ALBERTA ENERGY REGULATOR
NOTES TO THE FINANCIAL STATEMENTS
March 31, 2017
(in thousands)

Note 8 Revolving line of credit

During 2017, the AER had an unsecured $50,000 revolving line of credit. Amounts borrowed can only be applied to general corporate purposes and exclude the funding of operating deficits and/or capital expenditures. Bank advances on the line of credit are payable on demand and bear interest at prime less 0.5%. As at March 31, 2017, the outstanding balance for the revolving line of credit was $nil (2016 -$nil).

For the year ended March 31, 2017, interest expense on the revolving line of credit was $13 (2016 - $nil) and is included in the Statement of Operations.

Note 9 Unearned revenue

	2017	2016
Balance at beginning of year	$ 1,604	$ 2,056
Received during year	1,143	395
Less amounts recognized as revenue	(750)	(847)
Balance at end of year	$ 1,997	$ 1,604

Note 10 Deferred lease incentives

The AER has entered into various lease agreements which provide for lease incentives comprised of reduced rent benefits, rent-free periods and leasehold improvement costs. These amounts are included in deferred lease incentives and are amortized on a straight line basis over the term of the lease.

	2017			2016
	Leasehold improvement costs	Reduced rent benefits and rent-free periods	Total	Total
Balance at beginning of year	$ 17,899	$ 4,365	$ 22,264	$ 23,023
Additions during the year	-	-	-	763
Amortization	(1,252)	(364)	(1,616)	(1,522)
Balance at end of year	$ 16,647	$ 4,001	$ 20,648	$ 22,264

Note 11 Liability for contaminated sites

As at March 31, 2017, the AER is not responsible, nor has it accepted responsibility, for performing remediation work at contaminated sites. As at March 31, 2017, the AER's liability for contaminated sites was $nil (2016 - $nil).

ALBERTA ENERGY REGULATOR
NOTES TO THE FINANCIAL STATEMENTS
March 31, 2017
(in thousands)

Note 12 Pension

The AER participates in the Government of Alberta's multi-employer pension plans: Management Employees Pension Plan, Public Service Pension Plan and Supplementary Retirement Plan for Public Service Managers. For the year ended March 31, 2017, the expense for these pension plans is equal to the contribution of $17,766 (2016 - $18,026). The AER is not responsible for future funding of the plan deficit other than through contribution increases.

In addition, the AER maintains its own defined benefit Senior Employees Pension Plan (SEPP) and two supplementary pension plans to compensate senior staff who do not participate in the government management pension plans. Retirement benefits are based on each employee's years of service and remuneration.

The effective date of the most recent actuarial funding valuation for SEPP was December 31, 2014. The accrued benefit obligation as at March 31, 2017 is based on the extrapolation of the results of this valuation. The effective date of the next required funding valuation for SEPP is December 31, 2017.

Pension plan assets are valued at market values. During the year ended March 31, 2017 the weighted average actual return on plan assets was 8.5% (-3.4% in 2016).

Significant weighted average actuarial and economic assumptions used to value accrued benefit obligations and pension benefit costs are as follows:

Accrued benefit obligations	March 31, 2017	March 31, 2016
Discount rate	4.6%	4.7%
Rate of compensation increase	0% for 3 years, 3.5% thereafter	0% for 2 years, 3.5% thereafter
Long-term inflation rate	2.0%	2.0%

Pension benefit costs for the year	2017	2016
Discount rate	4.7%	4.9%
Expected rate of return on plan assets	4.7%	4.9%
Rate of compensation increase	0% for 2 years, 3.5% thereafter	0% for 1 year, 3.5% thereafter

ALBERTA ENERGY REGULATOR
NOTES TO THE FINANCIAL STATEMENTS
March 31, 2017
(in thousands)

Note 12 Pension (continued)

The funded status and amounts recognized in the Statement of Financial Position are as follows:

	March 31, 2017	March 31, 2016
Market value of plan assets	$ 56,633	$ 47,853
Accrued benefit obligations	58,200	54,639
Plan (deficit)	(1,567)	(6,786)
Unamortized actuarial loss	2,077	6,094
Pension assets (obligations)	$ 510	$ (692)

The pension benefit costs for the year include the following components:

	2017	2016
Current period benefit cost	$ 4,302	$ 4,375
Interest cost	2,690	2,573
Expected return on plan assets	(2,358)	(2,330)
Amortization of actuarial losses	861	436
	$ 5,495	$ 5,054

Additional information about the defined benefit pension plans is as follows:

	2017	2016
AER contribution	$ 6,697	$ 6,711
Employees' contribution	840	861
Benefits paid	3,001	3,216

The asset allocation of the defined benefit pension plans' investments is as follows:

	March 31, 2017	March 31, 2016
Equity securities	48.8%	47.9%
Debt securities	36.0%	37.7%
Other	15.2%	14.4%
	100.0%	100.0%

ALBERTA ENERGY REGULATOR
NOTES TO THE FINANCIAL STATEMENTS
March 31, 2017
(in thousands)

Note 13 Tangible capital assets

	2017					2016
	Land	Leasehold improvements	Furniture and equipment	Computer hardware and software	Total	Total
Estimated useful life	Indefinite	Term of the lease	5-12 years	4-5 years		
Historical cost						
Beginning of year	$ 282	$ 38,707	$ 15,249	$ 126,868	$ 181,106	$ 176,490
Additions	-	937	802	10,370	12,109	14,196
Disposals, including write-downs	-	(2)	(1,241)	(13,092)	(14,335)	(9,580)
	282	39,642	14,810	124,146	178,880	181,106
Accumulated amortization						
Beginning of year	$ -	$ 9,920	$ 8,804	$ 97,952	$ 116,676	$ 113,279
Amortization expense	-	2,495	972	10,570	14,037	12,645
Effect of disposals, including write-downs	-	(2)	(1,240)	(13,017)	(14,259)	(9,248)
	-	12,413	8,536	95,505	116,454	116,676
Net book value at March 31, 2017	$ 282	$ 27,229	$ 6,274	$ 28,641	$ 62,426	
Net book value at March 31, 2016	$ 282	$ 28,787	$ 6,445	$ 28,916		$ 64,430

Historical cost includes work-in-progress at March 31, 2017 totaling $4,659 (March 31, 2016 - $3,767) comprised of: computer hardware and software $4,617 (March 31, 2016 - $3,767) and leasehold improvements $42 (March 31, 2016 - $nil).

ALBERTA ENERGY REGULATOR
NOTES TO THE FINANCIAL STATEMENTS
March 31, 2017
(in thousands)

Note 14 Accumulated surplus

The accumulated surplus of the AER is calculated as the sum of the net debt of the AER and its non-financial assets. The accumulated surplus represents the net assets of the AER. Accumulated surplus is comprised of the following:

	2017			2016
	Investments in tangible capital assets [a]	Unrestricted net assets	Accumulated surplus	Accumulated surplus
Balance at beginning of year	$ 46,531	$ 15,580	$ 62,111	$ 63,855
Annual operating (deficit)	-	(1,158)	(1,158)	(1,744)
Net investment in capital assets	(752)	752	-	-
Balance at end of year	$ 45,779	$ 15,174	$ 60,953	$ 62,111

(a) Excludes leasehold improvement costs received by the AER as a lease incentive.

Note 15 Contingent liabilities

The AER, in the conduct of its normal activities, is a defendant in a number of legal proceedings. While the ultimate outcome and liability of these proceedings cannot be reasonably determined at this time, the AER believes that any settlement will not have a material adverse effect on the financial position or the results of operations of the AER. Based on legal advice, management has concluded that none of the claims meet the criteria for recognizing an accrued liability under PSAS.

Note 16 Contractual obligations

Contractual obligations are obligations of the AER to others that will become liabilities in the future when the terms of those contracts or agreements are met.

Estimated payment requirements for obligations under operating leases and contracts for each of the next five years and thereafter are as follows:

2018	$ 30,764
2019	20,691
2020	15,230
2021	12,680
2022	12,918
Thereafter	97,179
	$ 189,462

ALBERTA ENERGY REGULATOR
NOTES TO THE FINANCIAL STATEMENTS
March 31, 2017
(in thousands)

Note 17 Assets under administration

The AER administers security deposit programs in accordance with specified acts and regulations. Security deposits are held on behalf of depositors with no power of appropriation and therefore are not reported in these financial statements. The AER does not have any financial risk associated with security collected. Security, along with any interest earned, will be returned to the depositors upon meeting specified refund criteria.

At March 31, 2017 assets under administration include security deposits held under the following programs:

	2017	2016	2017	2016
	Cash	Cash	Letters of Credit	Letters of Credit
Licensee Liability Rating program	$ 114,146	$ 107,695	$ 232,255	$ 183,162
Mine Financial Security program	40,993	24,230	1,345,974	1,340,513
Other programs	7,162	6,200	5,408	4,664
	$ 162,301	$ 138,125	$ 1,583,637	$ 1,528,339

Note 18 Related party transactions

Related parties are those entities consolidated or accounted for on the modified equity basis in the Government of Alberta's financial statements. Related parties also include key management personnel, comprising of the Board of Directors and the executive management. In 2017, there were no business relationships, outstanding amounts or transactions other than compensation, between the AER and its key management personnel. Key management personnel compensation is disclosed in Schedule 2.

The AER had the following transactions with related parties recognized in the Statement of Operations and the Statement of Financial Position at the amount of consideration agreed upon between the related parties:

	Entities in the Ministry		Other entities	
	2017	2016	2017	2016
Revenues				
Government transfer - provincial grant	$ 3,338	$ -	$ -	$ -
Information, services and fees	66	153	417	176
	$ 3,404	$ 153	$ 417	$ 176

ALBERTA ENERGY REGULATOR
NOTES TO THE FINANCIAL STATEMENTS
March 31, 2017
(in thousands)

Note 18 Related party transactions (continued)

	Entities in the Ministry		Other entities	
	2017	2016	2017	2016
Expenses				
Computer services	$ 2,199	$ 2,124	$ 1,651	$ 1,714
Buildings	-	-	617	846
Administrative	-	-	1,290	1,143
Consulting services	-	-	1,371	290
	$ 2,199	$ 2,124	$ 4,929	$ 3,993
Receivable from	$ 3,505	$ 91	$ 12	$ 6
Payable to	$ 509	$ -	$ 692	$ 588
Unearned revenue	$ -	$ -	$ 583	$ -

Note 19 Comparative figures

Certain 2016 figures have been reclassified to conform to the 2017 presentation.

Note 20 Approval of financial statements

These financial statements were approved by the AER Board of Directors on May 11, 2017.

ALBERTA ENERGY REGULATOR **Schedule 1**

SCHEDULE TO THE FINANCIAL STATEMENTS

Expenses - Detailed by Object

Year Ended March 31, 2017

(in thousands)

	2017	2016
Salaries, wages and employee benefits	$ 177,014	$ 180,705
Orphan well abandonment grant	31,028	31,111
Buildings	16,936	15,198
Computer services	16,742	15,719
Amortization of tangible capital assets	14,037	12,645
Consulting services	13,731	13,692
Administrative	5,320	4,657
Travel and transportation	4,115	4,603
Equipment rent and maintenance	884	881
Loss on disposal and write-down of tangible capital assets	76	332
Abandonment and enforcement	29	681
	$ 279,912	$ 280,224

ALBERTA ENERGY REGULATOR
SCHEDULE TO THE FINANCIAL STATEMENTS
Salaries and Benefits Disclosure
Year Ended March 31, 2017
(in thousands)

Schedule 2

	2017				2016
Position	Base salary [a]	Other cash benefits [b]	Other non-cash benefits [c]	Total [d]	Total
Board of Directors					
Chairman	$ 222	$ -	$ 11	$ 233	$ 276
Board Director [e]	106	-	4	110	77
Board Director [f]	52	-	2	54	117
Board Director [g]	47	-	3	50	-
Board Director [g]	45	-	3	48	-
Board Director [g]	45	-	3	48	-
Board Director [h]	24	-	2	26	119
Board Director [h]	25	-	-	25	118
Board Director [h]	22	-	2	24	106
Board Director [i]	-	-	-	-	67
Board Director [j]	-	-	-	-	28
Executives					
President and Chief Executive Officer [k]	527	29	139	695	725
Chief Hearing Commissioner	209	18	59	286	287
Executive Vice-President, Corporate Services	274	82	75	431	440
Executive Vice-President and General Counsel [f]	274	83	103	460	453
Executive Vice-President, Operations [f]	316	89	116	521	524
Executive Vice-President, Stakeholder & Government Engagement	274	95	74	443	451
Executive Vice-President, Strategy & Regulatory [f]	274	87	37	398	386

(a) Includes retainers and per diems for Board Directors. Members of the Board of Directors do not participate in the AER's pension plans. Includes pensionable base pay for Executives.

(b) Payments in lieu of vacation and health benefits, vehicle allowances, and short term incentive payments for Executive Vice-Presidents.

(c) Contributions to all benefits as applicable including employer's share of Employment Insurance, Canada Pension Plan, Alberta and AER pension plans, health benefits or payments made for professional memberships and tuition fees.

(d) Salaries and benefits for the Board of Directors are presented in descending order.

(e) The incumbent held the position effective August 1, 2015.

(f) The incumbent left the position effective September 30, 2016.

(g) The incumbent held the position effective October 1, 2016.

(h) The incumbent left the position effective June 16, 2016.

(i) The incumbent left the position effective September 30, 2015.

(j) The incumbent left the position effective June 16, 2015.

(k) Automobile provided, no dollar amount included in other non-cash benefits.

ALBERTA ENERGY REGULATOR
SCHEDULE TO THE FINANCIAL STATEMENTS
Salaries and Benefits Disclosure
Year Ended March 31, 2017
(in thousands)

Schedule 2 (continued)

(l) Under the terms of the AER's defined benefit SEPP and two supplementary retirement plans (SRP), employees may receive supplemental retirement payments. Retirement arrangement costs as detailed below are not cash payments in the period but are the period expense for rights to future compensation. Costs shown reflect the total estimated cost to provide annual pension income over an actuarially determined post-employment period. The SEPP and SRP provide future pension benefits to participants based on years of service and remuneration. The cost of these benefits is actuarially determined using the projected benefit method pro-rated on service, a market interest rate, and management's best estimate of expected costs and the period of benefit coverage. Net actuarial gains and losses of the benefit obligations are amortized over the average remaining service life of the employee group. Current service cost is the actuarial present value of the benefits earned in the fiscal year. Prior service and other costs include amortization of past service costs, amortization of actuarial gains and losses, and interest accruing on the actuarial liability. The costs detailed below are only for those employees included in Schedule 2 who participate in the SEPP and SRP maintained by the AER to compensate senior staff who do not participate in the government management pension plans.

	2017			2016
Position	Current service cost	Prior service and other costs	Total	Total
Executive Vice-President and General Counsel	$ 43	$ 10	$ 53	$ 47
Executive Vice-President, Operations	57	4	61	56
Executive Vice-President, Strategy & Regulatory	-	24	24	27

Position	Accrued obligation April 1, 2016	Changes in accrued obligation	Accrued obligation March 31, 2017	2016
Executive Vice-President and General Counsel	$ 475	$ 50	$ 525	$ 475
Executive Vice-President, Operations	204	66	270	204
Executive Vice-President, Strategy & Regulatory	1,175	5	1,180	1,175

ALBERTA ENERGY REGULATOR **Schedule 3**

SCHEDULE TO THE FINANCIAL STATEMENTS

Actual Results Compared with Budget

Year Ended March 31, 2017

(in thousands)

	Budget (Note 3)	Adjustments[a]	Adjusted budget	Actual
Revenues				
Industry levies and assessments	$ 268,403	$ -	$ 268,403	$ 269,222
Information, services and fees	4,146	-	4,146	5,132
Government transfer - provincial grant	-	3,624	3,624	3,338
Investment	867	-	867	1,062
	273,416	3,624	277,040	278,754
Expenses				
Energy regulation	245,416	-	245,416	245,959
Orphan well abandonment	30,500	-	30,500	31,028
Climate leadership plan	-	3,624	3,624	2,925
	275,916	3,624	279,540	279,912
Annual operating (deficit)	(2,500)	-	(2,500)	(1,158)
Capital				
Capital investment	9,000	-	9,000	12,109
Less: Amortization	(11,500)	-	(11,500)	(14,037)
Loss on disposal and write-down of tangible capital assets		-	-	(76)
Net capital investment	(2,500)	-	(2,500)	(2,004)
	$ -	$ -	$ -	$ 846

(a) Adjustments are for grant revenues and associated expenditures received from the Government of Alberta to implement a component of the Climate leadership plan.

GLOSSARY

A

Alternative dispute resolution (ADR)
ADR refers to alternate means of resolving disputes outside of a hearing or a courtroom. It's an umbrella term that includes negotiation, mediation, facilitation, arbitration, and conciliation. These options aim to help people explore and understand each other's interests and develop acceptable solutions together by creating an environment that supports respectful discussion.

Area-based regulation
A collaborative approach designed to make geographically-specific rules and practices that consider the unique environmental and energy-resource conditions in a defined geographic area. This is done in collaboration with the people who live, work, and play in the area.

B

Bitumen
Extra-heavy oil that in its natural states does not flow to a well. Bitumen can be sold as either upgraded or nonupgraded. Upgraded bitumen, which is typically used by refineries as feedstock, has been processed into synthetic crude oil. Nonupgraded bitumen is bitumen that is sold without any processing.

C

Cumulative effects
The total environmental changes caused by energy development activities in combination with other past, present, and future human actions.

E

Emissions
Gases that are released, intentionally or unintentionally, into the air from energy developments. The AER regulates emissions through *Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting*. *See also* flaring, incinerating, venting.

Empathic engagement
From the Regulatory Excellence initiative, empathic engagement is an attribute that we will need to exhibit to be excellent. It means that we work together to make fully informed decision and build strong relationships while being straightforward about issues, listening carefully and responding respectfully to our stakeholders, and ensuring our decisions are understood. We are fair, inclusive, and transparent. *See also* stellar competence, utmost integrity.

Environmental Protection and Enhancement Act
Legislation, or law, supporting and promoting the protection, enhancement, and wise use of the environment. The AER assesses applications under *EPEA* for all activities relating to energy development.

F

Flaring
The burning of natural gas that cannot be processed or sold at the end of a flare stack (i.e., a long metal pipe that gas is sent up, much like a chimney). This causes the flame associated with flaring. *See also* emissions, venting.

Flowback
Flowback is the mixture of fluid that is collected after the hydraulic fracturing process, before production begins. Fluid is carried to the surface and separated from the gas, which is often vented or flared to the atmosphere.

Fugitive emissions
Potentially hazardous gas fumes that escape from pipes undetected and are not visible to the naked eye.

H

Hydraulic fracturing
The process of pumping fluid into a wellbore to create enough pressure to crack, or fracture, the rock layer. The fluid usually contains a proppant, like sand, that helps keep the fractures open to allow oil and gas to be produced to the well.

I

Inactive well
A well that has been idle for 6 or 12 months, depending on type, but has not been suspended in accordance with *Directive 013: Suspension Requirements for Wells*.

Integrated decision approach
A regulatory approach in which the AER reviews all aspects of a project through a single application, including how it will be constructed, operated, and eventually reclaimed. Using technology-based processes, this approach applies integrated and risk-informed decision making across the life cycle of a development.

L

Life cycle
All the stages in the life of a well, facility, project, or other energy development. The full life cycle begins with application and ends with reclamation.

O

Oil sands
A mixture of sand, clay, water, and bitumen.

P

Proved plus probable reserves
Proved reserves are those that can be estimated with a high degree of certainty to be recoverable; probable reserves are those additional reserves that are less certain to be recovered. The proved plus probable reserve value can also be defined as the best technical estimate.

R

Reclamation certificate
Reclamation certificates are required for all publicly owned land as stated in the *Environmental Protection and Enhancement Act*. Operators are required to return the land to its equivalent state—i.e., as close to its pre-project state as possible—once an oil and gas project is complete.

Regulatory excellence
As defined by the University of Pennsylvania's Penn Program on Regulation, regulatory excellence embodies the attributes of utmost integrity, empathic engagement, and stellar competence.

Remaining established reserves
The amount of a resource that is still in the ground. Remaining established reserves equal initial established reserves less cumulative production.

Responsible Energy Development Act (REDA)
Legislation, or law, establishing and empowering the AER. *REDA* sets out the AER's mandate, structure, powers, duties, and functions.

S

Stakeholder
Any individual, group of individuals, or organization with an interest in the outcome of a decision.

Statutory decision-maker
A statutory decision-maker is an AER manager or director who has been delegated the authority to exercise legislative powers to assess penalties.

Stellar competence
From the Regulatory Excellence initiative, stellar competence is an attribute we will need to exhibit to be excellent. It means that our people have the required expertise and the necessary tools to carry out their responsibilities and that we seek expertise and information outside of our organization to make well-informed decisions. We deliver outcomes, measure and report on our performance, and continuously improve. *See also* empathic engagement, utmost integrity.

T

Tailings
Tailings are a by-product of the process used to extract bitumen from mined oil sands and consist of water, silt, sand, clay, and residual bitumen. Sand and other heavy particles quickly separate from the water, but smaller particles of clay and silt remain in suspension, forming fluid tailings. Fluid tailings can take decades to settle and are an ongoing challenge for the oil sands mining industry. *See also Tailings Management Framework of the Mineable Athabasca Oil Sands*.

U

Upstream
The producing end of the energy industry. Compare "downstream" operations, which include transport, refining, and making products.

Utmost integrity
From the Regulatory Excellence initiative, utmost integrity is an attribute that we will need to exhibit to be excellent. It means that we are accountable as a protective, effective, efficient, and credible regulator and that we are fair and unbiased. We adhere to government policy and take a leadership in identifying policy gaps where they exist, and we make evidence-based decisions that consider the environment, the unique nature of the energy development, traditional knowledge, and information brought forward by local communities. *See also* empathic engagement, stellar competence.

V

Venting
The intentional and controlled release of uncombusted gas. *See also* emissions, flaring, incinerating.

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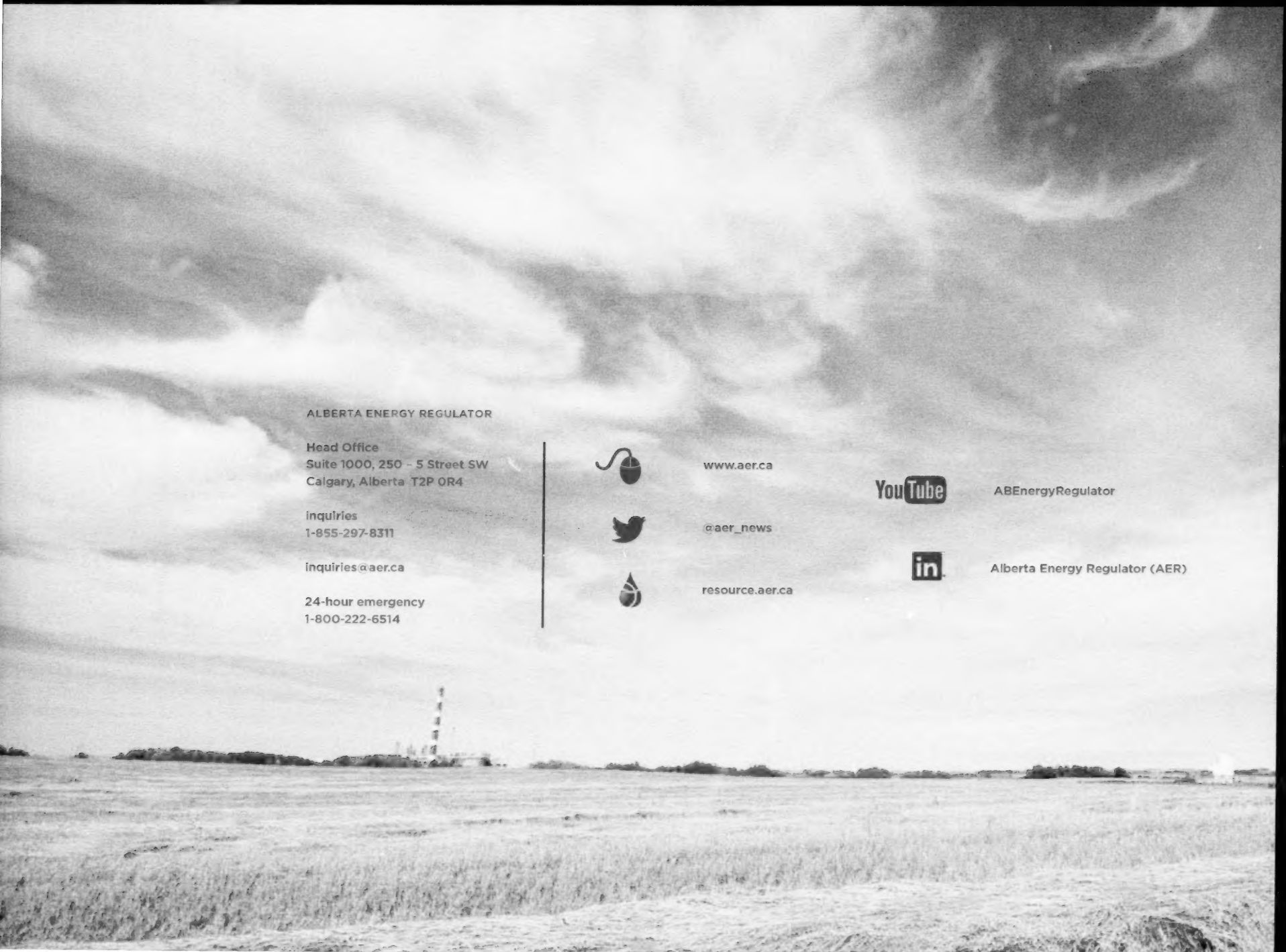

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